RAMEY KEMP ASSOCIATES

TOGETHER WE ARE LIMITLESS

Brigman Property

Traffic Impact Analysis
Matthews, North Carolina

RKA

rameykemp.com

TRAFFIC IMPACT ANALYSIS

FOR

BRIGMAN PROPERTY

LOCATED

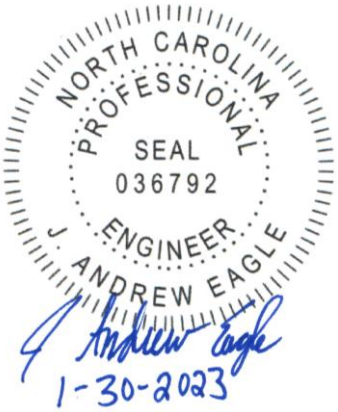
IN

MATTHEWS, NC

Prepared For:
PROFFIT DIXON PARTNERS, LLC
1420 East 7th Street, Suite 150
Charlotte, NC 28204

Prepared By:
Infrastructure Consulting Services, Inc
dba
Ramey Kemp & Associates, Inc.
8210 University Executive Park Drive, Suite 220
Charlotte, NC 28262
License #F-1489

JANUARY 2023



Prepared By: GWH

RKA Project No. 21611

Reviewed By: JAE

TRAFFIC IMPACT ANALYSIS
BRIGMAN PROPERTY
MATTHEWS, NORTH CAROLINA

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Brigman Property in accordance with the North Carolina Department of Transportation (NCDOT) capacity analysis guidelines and the Matthews (Town) Unified Development Ordinance (UDO). The proposed development is to be located south of Matthews-Mint Hill Road and west of Sports Parkway in Matthews, North Carolina.

The proposed development is anticipated to be built out in three (3) phases consisting of the following land uses:

Phase 1 (2025 Buildout)

- 340 multifamily (mid-rise) units
- 120 room hotel
- 6,000 square feet (sq. ft.) of retail
- 3,000 sq. ft. of fast casual restaurant
- 7,500 sq. ft. brewery

Phase 2 (2026 Buildout)

- 185 multifamily (low-rise) units

Full Build (2032 Buildout)

Main Site

- 15 multifamily (low-rise) units
- 374 multifamily (mid-rise) units
- 106,250 sq. ft. of general office building
- 8,500 sq. ft. of retail
- 6,000 sq. ft. of fast casual restaurant

Parcel T

- 90,000 sq. ft. storage facility
- 100 multifamily (mid-rise) units
- 8,000 sq. ft. retail space
- 2,500 sq. ft. fast casual restaurant

It should be noted that to properly assess the individual impacts of Parcel T that the trip generation, distribution, and assignment for this parcel will be separate from the main site but will occur simultaneously at full buildout. The final density of the proposed development at full buildout is as follows:

- 90,000 sq. ft. storage facility
- 120 room hotel
- 200 multifamily (low-rise)
- 814 multifamily (mid-rise)
- 106,250 sq. ft. of general office building
- 22,500 sq. ft. retail
- 11,500 sq. ft. of fast casual restaurant
- 7,500 sq. ft. brewery

Site access to the northeastern section is proposed via one (1) full movement intersection along IPP Extension and two (2) full movement intersections along Public Road A. Site access to the northwestern section of the main site is proposed via one (1) full movement intersection along Independence Point Parkway Extension (IPP Extension) and one (1) full movement intersection along Public Road A. The full movement site drive along IPP Extension is expected to be aligned between the northeastern and northwestern sections of the main site.

Site access to the southwestern section is proposed via three (3) full movement intersections along Public Road A and one full movement intersection along Public Road C / Greylock Ridge Road Extension. The easternmost intersection along Public Road A, west of IPP Extension, is proposed to be aligned with the site driveway for the northwestern section. Site Access to the

southeastern section of the site is proposed via two (2) full movement intersections along IPP Extension and one (1) full movement intersection along Public Road A.

Site access to Parcel T is proposed via connection to the future intersection of Sports Parkway and Public Road A as the 4th leg of this future intersection, and via one (1) full movement intersection to the south along Sports Parkway.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2025 No-Build Traffic Conditions
- 2025 Build (Phase 1) Traffic Conditions
- 2026 No-Build Traffic Conditions
- 2026 Build (Phase 2) Traffic Conditions
- 2026 Build (Phase 2) Traffic Conditions *with Greylock Extension*
- 2032 No-Build Traffic Conditions
- 2032 Build (Full Build) Traffic Conditions
- 2032 Build (Full Build) Traffic Conditions *with Greylock Extension*
- 2037 No-Build Traffic Conditions
- 2037 Build (Build Year +5) Traffic Conditions
- 2037 Build (Build Year +5) Traffic Conditions *with Greylock Extension*
- 2045 No-Build Traffic Conditions
- 2045 Future (U-2509 Design Year) Traffic Conditions
- 2045 Future (U-2509 Design Year) Traffic Conditions *with Greylock Extension*

2. Existing Traffic Conditions

The study area for the TIA was determined through coordination with the Town and NCDOT and consists of the following existing intersections:

- US 74 (Andrew Jackson Highway) and Matthews-Mint Hill Road
- US 74 (Andrew Jackson Highway) and Sports Parkway
- Matthews-Mint Hill Road and Crestdale Road

- Matthews-Mint Hill Road and Independence Pointe Parkway / Independence Pointe Parkway Extension
- Matthews-Mint Hill Road and Brigman Road
- Matthews-Mint Hill Road and Moore Road / Northeast Parkway
- Sports Parkway and Brigman Road
- Sports Parkway / Chimore Lane and Tank Town Road

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in March of 2022 by Quality Counts, LLC. during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods:

- US 74 (Andrew Jackson Highway) and Matthews-Mint Hill Road
- US 74 (Andrew Jackson Highway) and Sports Parkway
- Matthews-Mint Hill Road and Crestdale Road
- Matthews-Mint Hill Road and Independence Pointe Parkway / Independence Pointe Parkway Extension
- Matthews-Mint Hill Road and Brigman Road
- Matthews-Mint Hill Road and Moore Road / Northeast Parkway
- Sports Parkway and Brigman Road
- Sports Parkway / Chimore Lane and Tank Town Road

Traffic volumes were balanced between study intersections, where appropriate.

3. Site Trip Generation

Buildout of the proposed development is expected to occur in three (3) phases with the densities described in Section 1 of this report and in the tables below. Phase 1 is expected to occur in 2025, Phase 2 in 2026, and full buildout by the year 2032 and is assumed to consist of the following land uses:

- 90,000 sq. ft. storage facility
- 120 room hotel
- 200 multifamily (low-rise)
- 814 multifamily (mid-rise)
- 106,250 sq. ft. of general office building

- 22,500 sq. ft. retail
- 11,500 sq. ft. of fast casual restaurant
- 7,500 sq. ft. brewery

Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 11th Edition.

Internal capture of trips between the office, residential, and retail/restaurant uses was considered in this study for each phase of buildout. Internal capture is the consideration for trips that will be made within the site between different land uses, so the vehicle technically never leaves the internal site but can still be considered as a trip to that specific land use. Internal capture typically only considers trips between residential, office, and retail/restaurant land uses. Internal capture rates were based on NCHRP Report 684 methodology and were approved during scoping by the Town and NCDOT.

Tables E-1A-D, on the following pages, provide a summary of the trip generation potential for the site under 2025 (Phase 1) build, 2026 (Phase 2) build, 2032 full build, and 2045 full build with completion of the Silverline which is expected to provide a transit-reduction.

Table E-1A: Trip Generation Summary – Phase 1 (2025)

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Multi-Family Housing (Mid-Rise) (221)	340 DU	1,575	32	106	81	52
Hotel (310)	120 Rooms	877	30	23	31	30
Retail (<40KSF) (822)	6 KSF	483	13	8	27	27
Fast-Casual Restaurant (930)	3 KSF	291	2	2	21	17
Brewery (971)	7.5 KSF	463	4	1	44	30
Total Trips		**3,689**	**81**	**140**	**204**	**156**
*Internal Capture (3% AM, 18% PM) **			*-3*	*-4*	*-38*	*-27*
Total External Trips			***78***	***136***	***166***	***129***

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 3,689 total site trips on the roadway network during a typical 24-hour weekday period under Phase 1 (2025) build out. Of the daily traffic volume, it is anticipated that 214 external trips (78 entering and 136 exiting) will occur during the weekday AM peak hour and 295 external trips (166 entering and 129 exiting) will occur during the weekday PM peak hour.

Table E-1B: Trip Generation Summary – Phase 2 (2026)

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Multi-Family Housing (Low-Rise) (220)	185 DU	1,261	19	61	63	37
Multi-Family Housing (Mid-Rise) (221)	340 DU	1,575	32	106	81	52
Hotel (310)	120 Rooms	877	30	23	31	30
Retail (<40KSF) (822)	6 KSF	483	13	8	27	27
Fast-Casual Restaurant (930)	3 KSF	291	2	2	21	17
Brewery (971)	7.5 KSF	463	4	1	44	30
Total Trips		**4,950**	**100**	**201**	**267**	**193**
*Internal Capture (3% AM, 11% PM) **			*-3*	*-6*	*-30*	*-21*
Total External Trips			***97***	***195***	***237***	***172***

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 4,950 total site trips on the roadway network during a typical 24-hour weekday period under Phase 2 (2026) build out. Of the daily traffic volume, it is anticipated that 292 external trips (97 entering and 195 exiting) will occur during the weekday AM peak hour and 409 external trips (237 entering and 172 exiting) will occur during the weekday PM peak hour.

Table E-1C: Trip Generation Summary – Full Buildout (2032) [Main Site]

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Main Site						
Multi-Family Housing (Low-Rise) (220)	200 DU	1,357	20	65	67	40
Multi-Family Housing (Mid-Rise) (221)	714 DU	3,359	70	233	170	109
Hotel (310)	120 Rooms	877	30	23	31	30
General Office Building (710)	106.25 KSF	1,223	155	21	30	145
Retail (<40KSF) (822)	14.5 KSF	842	22	15	50	51
Fast-Casual Restaurant (930)	9 KSF	874	6	7	62	51
Brewery (971)	7.5 KSF	463	4	1	44	30
Total Trips		**8,995**	**307**	**365**	**454**	**456**
*Internal Capture (9% AM, 16% PM) **			*-27*	*-33*	*-73*	*-73*
Total External Trips			***280***	***332***	***381***	***383***
Parcel T						
Mini-Warehouse (151)	90 KSF	131	5	3	7	7
Multi-Family Housing (Mid-Rise) (221)	100 DU	431	7	25	24	15
Retail (<40KSF) (822)	8 KSF	567	15	10	33	33
Fast-Casual Restaurant (930)	2.5 KSF	243	2	2	17	14
Total Trips		**1,372**	**29**	**40**	**81**	**69**
Total Trips (Combined)		**10,367**	**309**	**372**	**462**	**452**

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 10,367 total site trips on the roadway network during a typical 24-hour weekday period under full buildout (2032). Of the daily traffic volume, it is anticipated that 681 external trips (309 entering and 372 exiting) will occur during the weekday AM peak hour and 914 external trips (462 entering and 452 exiting) will occur during the weekday PM peak hour.

Table E-1D: Trip Generation Summary – Full Buildout (2045)

Trip Generator	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
		Enter	Exit	Enter	Exit
External Trips [Main Site]	8,995	280	332	381	383
External Trips [Parcel T]	1,372	29	40	81	69
Total External Trips	**10,367**	**309**	**372**	**462**	**452**
Silver Line Transit Reduction (10%)	*-1,037*	*-31*	*-37*	*-46*	*-45*
Total Primary Trips	**9,330**	**278**	**335**	**416**	**407**

Based on scoping with the Town and NCDOT, it was determined that with the expected completion of the Silverline extension by the future 2045 analysis year that a transit reduction factor could be applied to the trip generation potential of the proposed development. A 10% transit reduction factor was determined to appropriately model the impact that this transit connection would have on the development's future site traffic. It is estimated that the proposed development will generate approximately 9,330 total site trips on the roadway network during a typical 24-hour weekday period under future 2045 build analysis conditions. Of the daily traffic volume, it is anticipated that 613 external trips (278 entering and 335 exiting) will occur during the weekday AM peak hour and 823 external trips (416 entering and 407 exiting) will occur during the weekday PM peak hour.

4. Future Traffic Conditions

Through coordination with Town and NCDOT, it was determined that an annual growth rate of 1.5% would be used to generate generate projected weekday AM and PM peak hour traffic volumes. The following adjacent developments were identified to be considered under future conditions:

- Matthews Park

Through coordination with the Town and NCDOT, there are four (4) State Transportation Improvement Program (STIP) projects in the immediate area of this project:

- EB-5969 – Construct a multi-use path on the south side of NC 51 from Trade Street to Independence Point Parkway.
- U-5763 – Roadway widening from Sardis Road to E. John Street / Monroe Street.
- U-2509 – Construct Express lanes along US 74 from Idlewild Road to the I-485 On/Off Ramps.
- HL-0025 – Extend Greylock Ridge Road from E. John Street to E. Charles Street.

Since no roadway improvements are expected to be constructed with STIP EB-5969, no roadway improvements were analyzed at the study intersections. STIP U-5763 falls outside of the study area intersections considered with this project, therefore no roadway improvements were analyzed at the study intersections. STIP U-2509 impacts the study area, however the expected year of construction is currently unknown, therefore, it was only included in the analysis of 2045 future traffic conditions. STIP HL-0025 falls outside of the study area, however, this project is part of the planned future Greylock Ridge Road Extension. This future roadway is planned to extend Greylock Ridge Road from E. John Street to the future Independence Point Parkway Extension. Based on coordination with the Town, the middle section of this planned roadway from E. Charles Street to the proposed development property line is unfunded. Therefore, analysis of applicable future traffic conditions is provided with and without this completed planned future roadway.

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for all traffic conditions described in Section 1 of the Executive Summary. Refer to Section 7 of the TIA for the capacity analysis summary performed at each study intersection.

6. Recommendations

Based on the findings of this study, specific geometric and traffic control improvements have been identified at study intersections. The improvements are summarized below and are illustrated in Figure E-1.

2025 Build Recommended Improvements by Developer

Matthews-Mint Hill Road and Independence Pointe Parkway (IPP) / Driveway

- Construct a northbound IPP right turn lane with 250 feet of storage and appropriate taper length.
- Extend the westbound Matthews-Mint Hill Road left turn lane to provide 300 feet of storage and appropriate taper length.

Matthews-Mint Hill Road and Brigman Road

- Monitor the intersection for signalization and install signal once warrants are met.
- Extend the northbound Brigman Road right turn lane to provide 300 feet of storage and appropriate taper length.

Independence Point Parkway (IPP) Extension and Public Road A

- Construct the eastbound and westbound approaches of Public Road A with one ingress and one egress lane (shared left-through-right lane).
- Construct the northbound and southbound approaches of IPP Extension with one ingress and one egress lane (shared left-through-right lane).

Public Road A and Site Access 2

- Construct Site Access 2 with one ingress and one egress lane (shared left-right lane).

Public Road A and Site Access 3

- Construct Site Access 3 with one ingress and one egress lane (shared left-right lane).

Public Road A and Site Access 4

- Construct Site Access 4 with one ingress and one egress lane (shared left-right lane).

2026 Build Recommended Improvements by Developer

Matthews-Mint Hill Road and Brigman Road

- Construct a westbound Matthews-Mint Hill Road left turn lane with 300 feet of storage and appropriate taper length.

Public Road A and Site Access 5

- Construct Site Access 5 with one ingress and one egress lane (shared left-right lane).

Public Road A and Site Access 6

- Construct Site Access 6 with one ingress and one egress lane (shared left-right lane).

Public Road A and Site Access 7

- Construct Site Access 7 with one ingress and one egress lane (shared left-right lane).

IPP Extension and Site Access 9

- Construct Site Access 9 with one ingress and one egress lane (shared left-right lane).

IPP Extension and Site Access 10

- Construct Site Access 10 with one ingress and one egress lane (shared left-right lane).

2032 Build Recommended Improvements by Developer

Matthews-Mint Hill Road and Independence Pointe Parkway (IPP) / Driveway

- Extend the eastbound Matthews-Mint Hill Road left turn lane to provide 325 feet of storage and appropriate taper length.
- Construct an eastbound Matthews-Mint Hill Road through-right lane that provides 400 feet of storage and appropriate taper length.

Matthews-Mint Hill Road and Brigman Road

- Construct an eastbound Matthews-Mint Hill Road through-right lane that extends back to the intersection of Matthews-Mint Hill Road and IPP.

IPP Extension and Site Access 8

- Construct Site Access 8 with one ingress and one egress lane (shared left-right lane).

Sports Parkway and Public Road A / Site Access 11

- Construct Site Access 11 with one ingress and one egress lane (shared left-through-right lane).

Sports Parkway and Site Access 12

- Construct Site Access 12 with one ingress and one egress lane (shared left-right lane).

2037 Build Recommended Improvements by Developer (If required by Town)

US 74 and Matthews-Mint Hill Road

- Extend the eastbound Matthews-Mint Hill Road left turn lane to provide 500 feet of storage and appropriate taper length.
- Construct an additional eastbound Matthews-Mint Hill Road right turn lane with 400 feet of storage and appropriate taper length.
- Construct and additional southbound US 74 through lane.
- Construct an additional northbound US 74 through lane.

US 74 and Sports Parkway

- Construct and additional southbound US 74 through lane.
- Construct an additional northbound US 74 through lane.

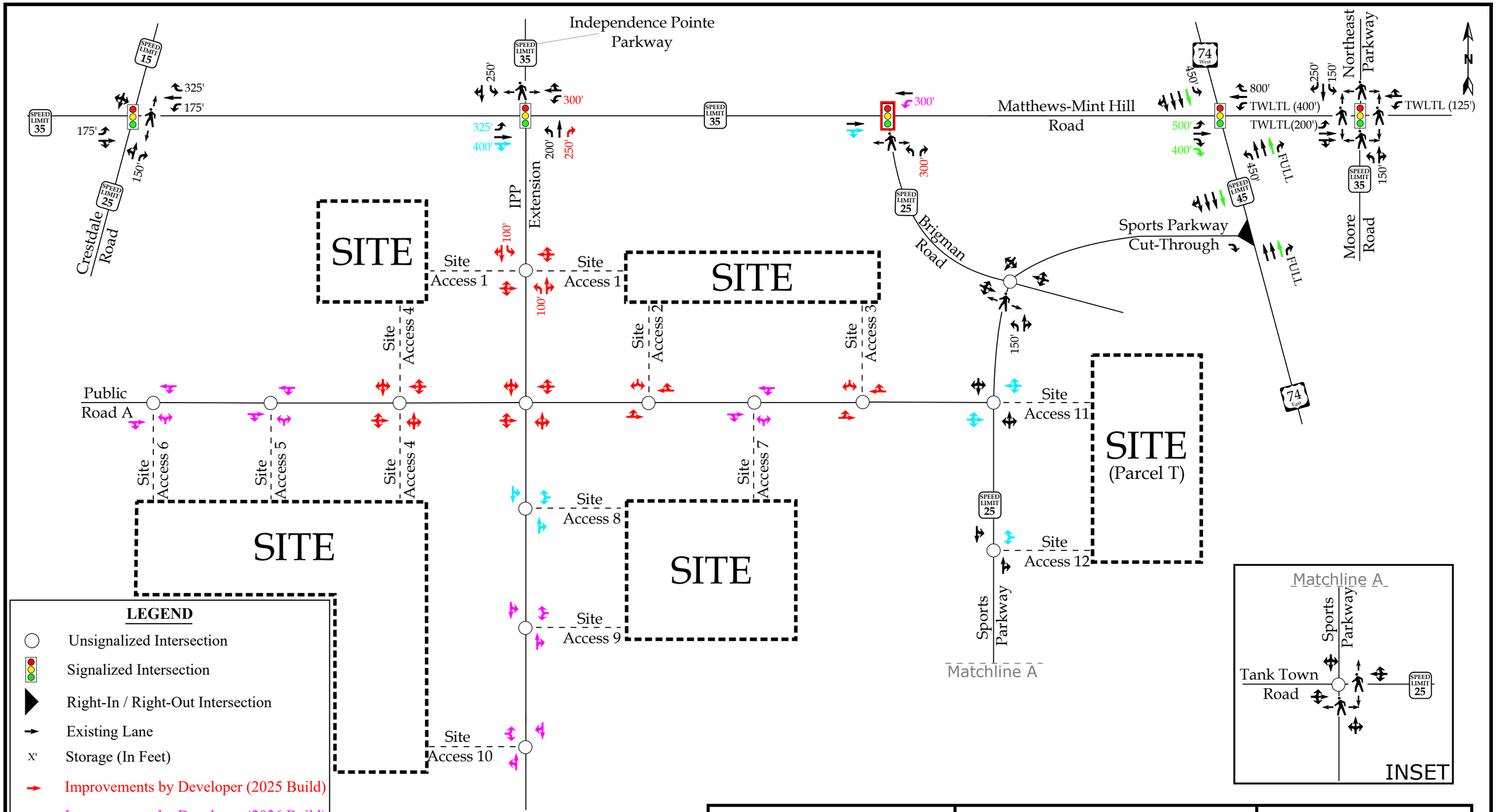

Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
Brigman Road
IPP Extension
Northeast Parkway
Moore Road
Sports Parkway Cut-Through
Public Road A
Sports Parkway
Tank Town Road
SITE
SITE
SITE
SITE
SITE
SITE
SITE (Parcel T)
Site Access 1
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Matchline A
Matchline A
INSET
SPEED LIMIT 15
SPEED LIMIT 25
SPEED LIMIT 35
SPEED LIMIT 45
74 West
74 East
325'
175'
175'
150'
250'
300'
325'
400'
200'
250'
100'
100'
300'
300'
150'
800'
TWLTL (400')
TWLTL(200')
TWLTL (125')
500'
400'
450'
FULL
FULL
250'
150'
150'
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In / Right-Out Intersection
Existing Lane
X' Storage (In Feet)
Improvements by Developer (2025 Build)
Improvements by Developer (2026 Build)
Improvements by Developer (2032 Build)
*Improvements by Developer (2037 Build)
*If required by Town before construction of STIP -2509
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Recommended Lane Configurations
Scale: Not to Scale
Figure E-1

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

TECHNICAL APPENDIX

TRAFFIC IMPACT ANALYSIS
BRIGMAN PROPERTY
MATTHEWS, NORTH CAROLINA

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Brigman Property mixed-use development to be located south of Matthews-Mint Hill Road and west of Sports Parkway in Matthews, North Carolina. The purpose of this study is to determine the potential impacts to the surrounding transportation system created by traffic generated by the proposed development, as well as recommend improvements to mitigate the impacts.

The proposed development is anticipated to be built out in three (3) phases consisting of the following land uses:

Phase 1 (2025 Buildout)

- 340 multifamily (mid-rise) units
- 120 room hotel
- 6,000 square feet (sq. ft.) of retail
- 3,000 sq. ft. of fast casual restaurant
- 7,500 sq. ft. brewery

Phase 2 (2026 Buildout)

- 185 multifamily (low-rise) units

Full Build (2032 Buildout)

Main Site

- 15 multifamily (low-rise) units
- 374 multifamily (mid-rise) units
- 106,250 sq. ft. of general office building
- 8,500 sq. ft. of retail

- 6,000 sq. ft. of fast casual restaurant

Parcel T

- 90,000 sq. ft. storage facility
- 100 multifamily (mid-rise) units
- 8,000 sq. ft. retail space
- 2,500 sq. ft. fast casual restaurant

It should be noted that to properly assess the individual impacts of Parcel T that the trip generation, distribution, and assignment for this parcel will be separate from the main site but will occur simultaneously at full buildout. The final density of the proposed development at full buildout is as follows:

- 90,000 sq. ft. storage facility
- 120 room hotel
- 200 multifamily (low-rise)
- 814 multifamily (mid-rise)
- 106,250 sq. ft. of general office building
- 22,500 sq. ft. retail
- 11,500 sq. ft. of fast casual restaurant
- 7,500 sq. ft. brewery

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2025 No-Build Traffic Conditions
- 2025 Build (Phase 1) Traffic Conditions
- 2026 No-Build Traffic Conditions
- 2026 Build (Phase 2) Traffic Conditions
- 2026 Build (Phase 2) Traffic Conditions *with Greylock Extension*
- 2032 No-Build Traffic Conditions
- 2032 Build (Full Build) Traffic Conditions
- 2032 Build (Full Build) Traffic Conditions *with Greylock Extension*

- 2037 No-Build Traffic Conditions
- 2037 Build (Build Year +5) Traffic Conditions
- 2037 Build (Build Year +5) Traffic Conditions *with Greylock Extension*
- 2045 No-Build Traffic Conditions
- 2045 Future (U-2509 Design Year) Traffic Conditions
- 2045 Future (U-2509 Design Year) Traffic Conditions *with Greylock Extension*

Alternative analysis of future traffic conditions with and without the completion of the Greylock Ridge Road Extension is provided for 2026 Build (Phase 2) traffic conditions and beyond to assess the impacts of this potential future roadway connection.

1.1. Site Location and Study Area

The development is proposed to be located south of Matthew-Mint Hill Road and west of Sports Parkway in Matthews, North Carolina. Refer to Figure 1 for the site location map.

The study area for the TIA was determined through coordination with the North Carolina Department of Transportation (NCDOT) and the Town of Matthews (Town) and consists of the following existing intersections:

- US 74 (Andrew Jackson Highway) and Matthews-Mint Hill Road
- US 74 (Andrew Jackson Highway) and Sports Parkway
- Matthews-Mint Hill Road and Crestdale Road
- Matthews-Mint Hill Road and Independence Pointe Parkway / Independence Pointe Parkway Extension
- Matthews-Mint Hill Road and Brigman Road
- Matthews-Mint Hill Road and Moore Road / Northeast Parkway
- Sports Parkway and Brigman Road
- Sports Parkway / Chimore Lane and Tank Town Road

Refer to Appendix A for the approved scoping documentation.

1.2. Proposed Land Use and Site Access

The site is expected to be located south of Matthews-Mint Hill Road and west of Sports Parkway in Matthews, North Carolina. The proposed development is anticipated to be built out in three (3) phases consisting of the following land uses:

Phase 1 (2025 Buildout)

- 340 multifamily (mid-rise) units
- 120 room hotel
- 6,000 square feet (sq. ft.) of retail
- 3,000 sq. ft. of fast casual restaurant
- 7,500 sq. ft. brewery

Phase 2 (2026 Buildout)

- 185 multifamily (low-rise) units

Full Build (2032 Buildout)

Main Site

- 15 multifamily (low-rise) units
- 374 multifamily (mid-rise) units
- 106,250 sq. ft. of general office building
- 8,500 sq. ft. of retail
- 6,000 sq. ft. of fast casual restaurant

Parcel T

- 90,000 sq. ft. storage facility
- 100 multifamily (mid-rise) units
- 8,000 sq. ft. retail space
- 2,500 sq. ft. fast casual restaurant

It should be noted that to properly assess the individual impacts of Parcel T that the trip generation, distribution, and assignment for this parcel will be separate from the main site, but will occur simultaneously at full buildout. The final density of the proposed development at full buildout is as follows:

- 90,000 sq. ft. storage facility
- 120 room hotel
- 200 multifamily (low-rise)
- 814 multifamily (mid-rise)
- 106,250 sq. ft. of general office building
- 22,500 sq. ft. retail
- 11,500 sq. ft. of fast casual restaurant
- 7,500 sq. ft. brewery

Site access to the northeastern section is proposed via one (1) full movement intersection along IPP Extension and two (2) full movement intersections along Public Road A. Site access to the northwestern section of the main site is proposed via one (1) full movement intersection along Independence Point Parkway Extension (IPP Extension) and one (1) full movement intersection along Public Road A. The full movement site drive along IPP Extension is expected to be aligned between the northeastern and northwestern sections of the main site.

Site access to the southwestern section is proposed via three (3) full movement intersections along Public Road A and one full movement intersection along Public Road C / Greylock Ridge Road Extension. The easternmost intersection along Public Road A, west of IPP Extension, is proposed to be aligned with the site driveway for the northwestern section. Site Access to the southeastern section of the site is proposed via two (2) full movement intersections along IPP Extension and one (1) full movement intersection along Public Road A.

Site access to Parcel T is proposed via connection to the future intersection of Sports Parkway and Public Road A as the 4th leg of this future intersection, and via one (1) full movement intersection to the south along Sports Parkway. Refer to Figure 2 for a copy of the preliminary site plan and to Appendix A for more information about the proposed site access locations.

1.3. Adjacent Land Uses

The proposed development is in an area consisting primarily of commercial development and residential development.

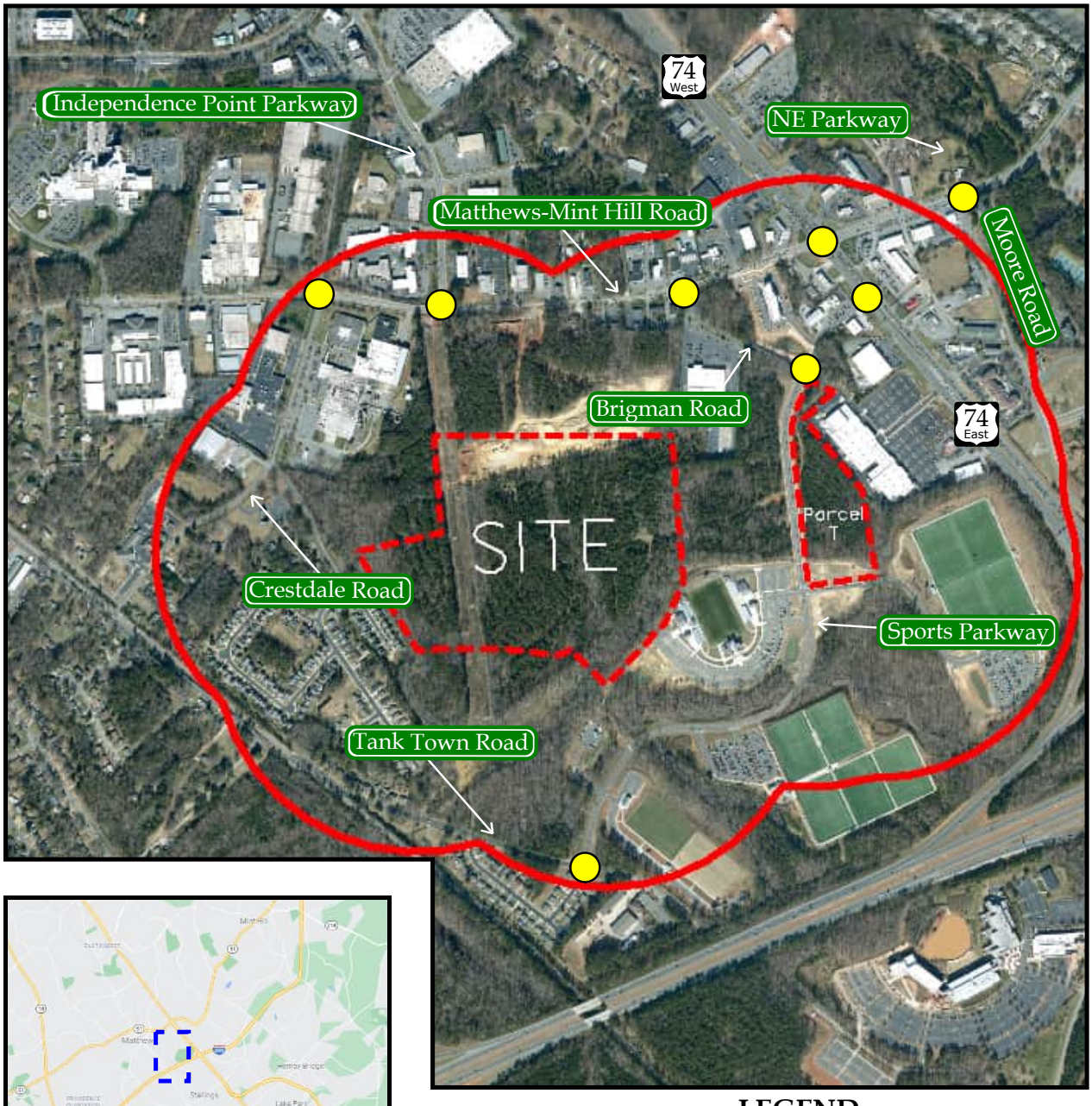
1.4. Existing Roadways

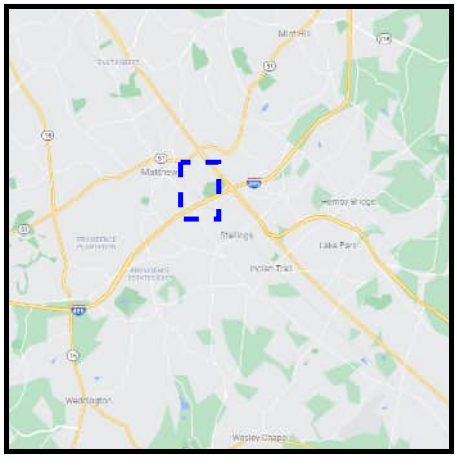
Existing lane configurations (number of traffic lanes on each intersection approach), storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1, on the following page, provides a summary of this information, as well.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	Maintained By	2018 AADT (vpd)
US 74		6-lane divided	45 mph	NCDOT	62,500
Matthews-Mint Hill Road	N/A	2-lane undivided	35 mph	Town	12,000
Independence Pointe Parkway	N/A	2-lane undivided	35 mph	Town	5,000*
Crestdale Road	N/A	2-lane undivided	35 mph	Town	11,360**
Brigman Road	N/A	2-lane undivided	25 mph	Town	6,030**
Sports Parkway	N/A	2-lane undivided	25 mph	Town	4,470**
Tank Town Road	N/A	2-lane undivided	25 mph	Town	2,630**

*ADT from 2016
**ADT based on the traffic counts from 2022 and assuming the weekday PM peak hour volume is 10% of the average daily traffic.



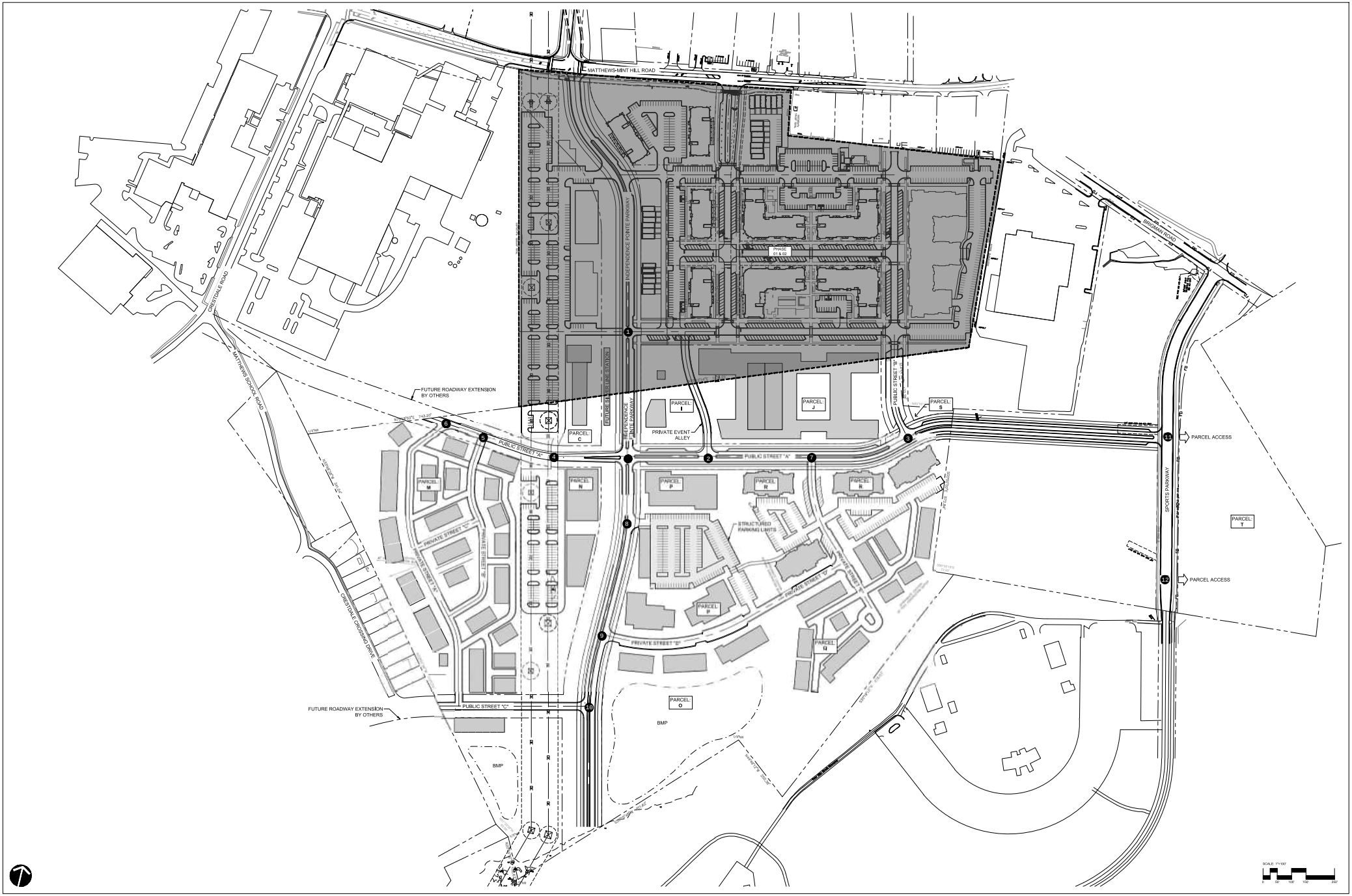


LEGEND

- Proposed Site Location
- Quater-Mile Buffer
- Study Intersection
- Study Area

N

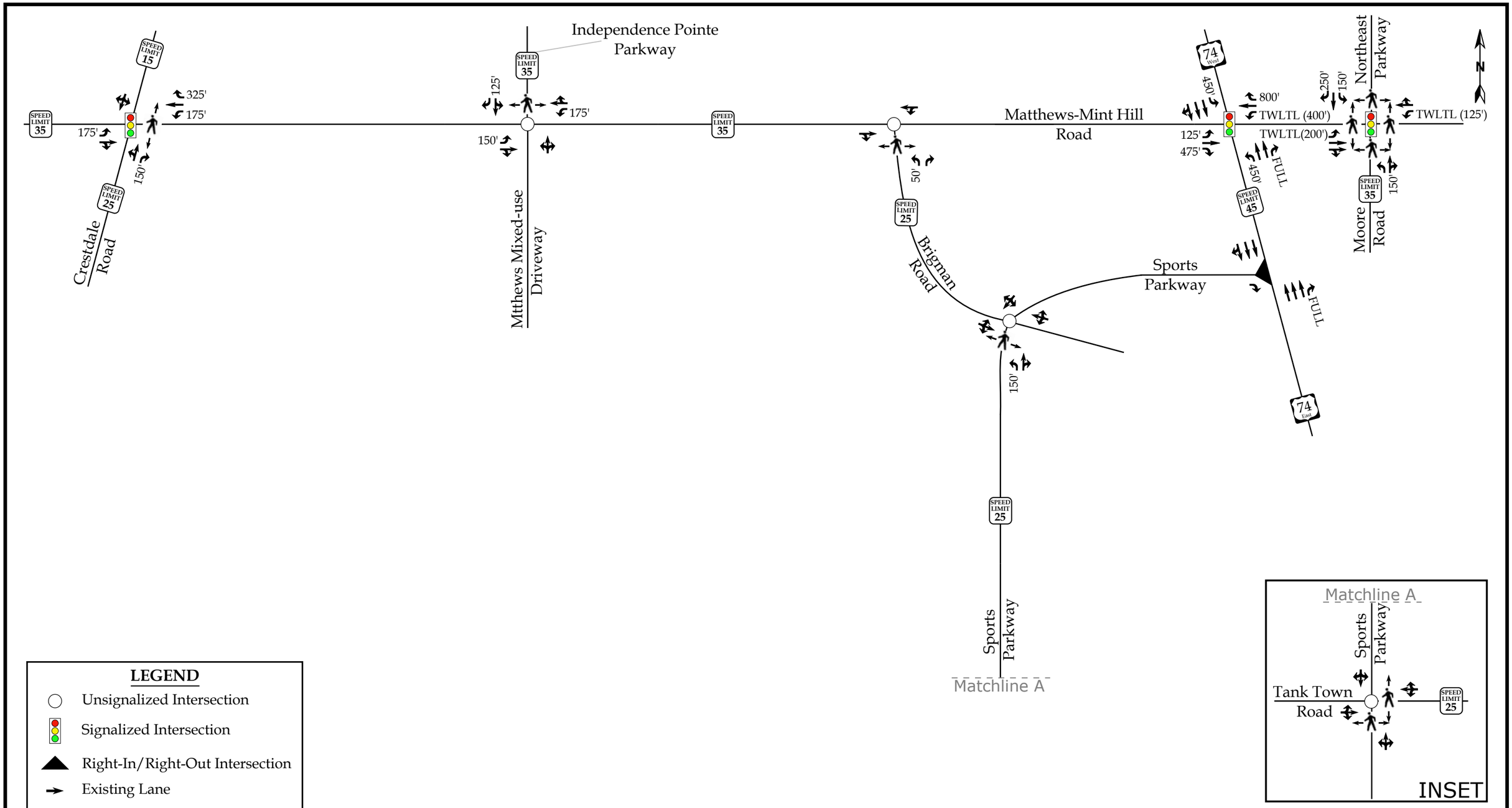
RKA RAMEY KEMP ASSOCIATES	Brigman Property Matthews, NC	Site Location Map Scale: Not to Scale | Figure 1



BRIGMAN MATTHEWS ▪ MATTHEWS, NC ▪ TIA STUDY

PN 1021179 | 03.21.2022 | PROFFITT DIXON PARTNERS

LandDesign.



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- Existing Lane
- X' Storage (In Feet)
- TWLTL Two-Way Left-Turn Lane
- Pedestrian Crosswalk
- SPEED LIMIT XX Posted Speed Limit

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2022 Existing Lane Configurations

Scale: Not to Scale | Figure 3

2. 2022 EXISTING PEAK HOUR CONDITIONS

2.1. 2022 Existing Peak Hour Traffic Volumes

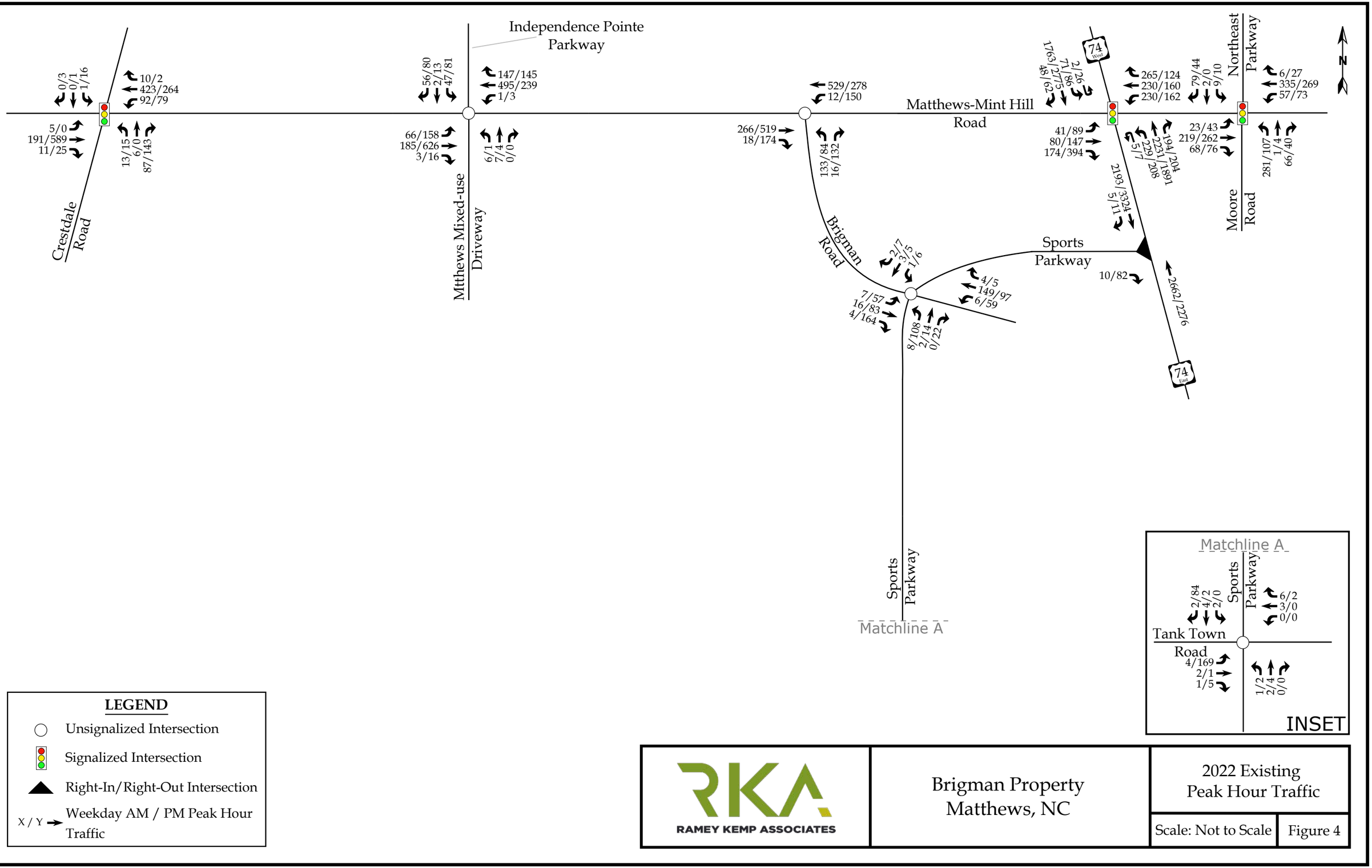
Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in March of 2022 by Quality Counts, LLC. during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods:

- US 74 (Andrew Jackson Highway) and Matthews-Mint Hill Road
- US 74 (Andrew Jackson Highway) and Sports Parkway
- Matthews-Mint Hill Road and Crestdale Road
- Matthews-Mint Hill Road and Independence Pointe Parkway / Independence Pointe Parkway Extension
- Matthews-Mint Hill Road and Brigman Road
- Matthews-Mint Hill Road and Moore Road / Northeast Parkway
- Sports Parkway and Brigman Road
- Sports Parkway / Chimore Lane and Tank Town Road

Refer to Figure 4 for 2022 existing weekday AM and PM peak hour traffic volumes. A copy of the count data is located in Appendix B of this report.

2.2. Analysis of 2022 Existing Peak Hour Traffic Conditions

The 2022 existing weekday AM and PM peak hour traffic volumes were analyzed to determine the current levels of service at the study intersections under existing roadway conditions. Signal information was obtained from NCDOT and is included in Appendix C. The results of the analysis are presented in Section 7 of this report.



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2022 Existing
Peak Hour Traffic

Scale: Not to Scale | Figure 4

3. NO-BUILD PEAK HOUR CONDITIONS

In order to account for growth of traffic and subsequent traffic conditions at a future year, no-build traffic projections are needed. No-build traffic is the component of traffic due to the growth of the community and surrounding area that is anticipated to occur regardless of whether or not the proposed development is constructed. No-build traffic is comprised of existing traffic growth within the study area and additional traffic created as a result of adjacent approved developments.

3.1. Ambient Traffic Growth

Through coordination with the Town and NCDOT, it was determined that an annual growth rate of 1.5% would be used to generate projected weekday AM and PM peak hour traffic volumes. Refer to Figures 5A-5C for an illustration of the 2025/2026/2032 projected peak hour traffic.

3.2. Adjacent Development Traffic

Through coordination with the Town and NCDOT, the Matthews Park adjacent development was identified to be included as an approved adjacent development in this study. Table 2, below, provides a summary of the adjacent developments.

Table 2: Adjacent Development Information

Development Name	Location	Build-Out Year	Land Use / Intensity	TIA Performed
Matthews Park	Along Matthews-Mint Hill Road	2021*	• 570 apartments* • 80,000 sq. ft. of medical-dental office building • 70,980 sq. ft. of shopping center	November 2017 by RKA

*Only 359 out of 570 of the residential units were built-out at the time of data collection. Therefore, only 40% of the trips anticipated to/from this land use in the Matthews Park development are proposed to be included.

It should be noted that the adjacent developments were approved during scoping by the NCDOT. Refer to Figure 6 for an illustration of the adjacent development trips. Refer to Appendix D for adjacent development information.

3.3. Future Roadway Improvements

Through coordination with the Town and NCDOT, there are four (4) State Transportation Improvement Program (STIP) projects in the immediate area of this project:

- EB-5969 – Construct a multi-use path on the south side of NC 51 from Trade Street to Independence Point Parkway.
- U-5763 – Roadway widening from Sardis Road to E. John Street / Monroe Street.
- U-2509 – Construct Express lanes along US 74 from Idlewild Road to the I-485 On/Off Ramps.
- HL-0025 – Extend Greylock Ridge Road from E. John Street to E. Charles Street.

Since no roadway improvements are expected to be constructed with STIP EB-5969, no roadway improvements were analyzed at the study intersections. STIP U-5763 falls outside of the study area intersections considered with this project, therefore no roadway improvements were analyzed at the study intersections. STIP U-2509 impacts the study area, however the expected year of construction is currently unknown, therefore, it was only included in the analysis of 2045 future traffic conditions. STIP HL-0025 falls outside of the study area, however, this project is part of the planned future Greylock Ridge Road Extension. This future roadway is planned to extend Greylock Ridge Road from E. John Street to the future Independence Point Parkway Extension. Based on coordination with the Town, the middle section of this planned roadway from E. Charles Street to the proposed development property line is unfunded. Therefore, analysis of applicable future traffic conditions is provided with and without this completed planned future roadway. Refer to Appendix E for the roadway improvement plans and traffic forecast associated with STIP U-2509.

3.4. 2025/2026/2032 No-Build Peak Hour Traffic Volumes

The 2025/2026/2032 no-build traffic volumes were determined by projecting the 2022 existing peak hour traffic to the year 2025/2026/2032 and adding the adjacent development

trips. Refer to Figures 7A-7C for illustrations of the 2025/2026/2032 no-build peak hour traffic volumes at the study intersections.

3.5. Analysis of 2025/2026/2032 No-Build Peak Hour Traffic Conditions

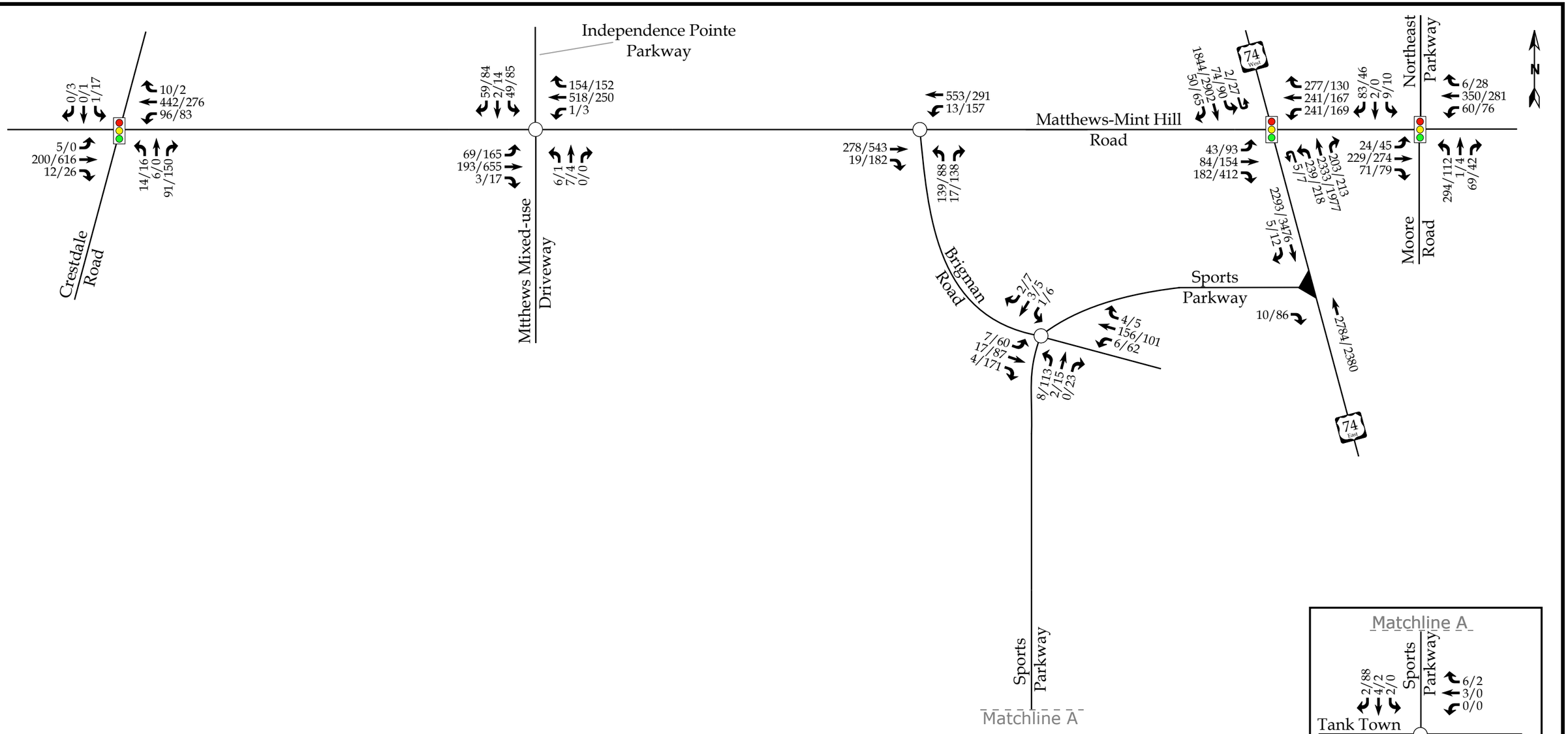
The 2025/2026/2032 no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control. The analysis results are presented in Section 7 of this report.

3.6. 2045 No-Build Peak Hour Traffic Volumes

The 2045 no-build traffic volumes were developed based on the U-2509 traffic forecast. Adjacent Development trips were added to the 2045 Projected traffic volumes to determine the 2045 no-build traffic volumes at the study intersections. Refer to Figure 7D for an illustration of the 2045 no-build peak hour traffic volumes at the study intersections.

3.7. Analysis of 2045 No-Build Peak Hour Traffic Conditions

The 2045 no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control. The analysis results are presented in Section 7 of this report.



LEGEND

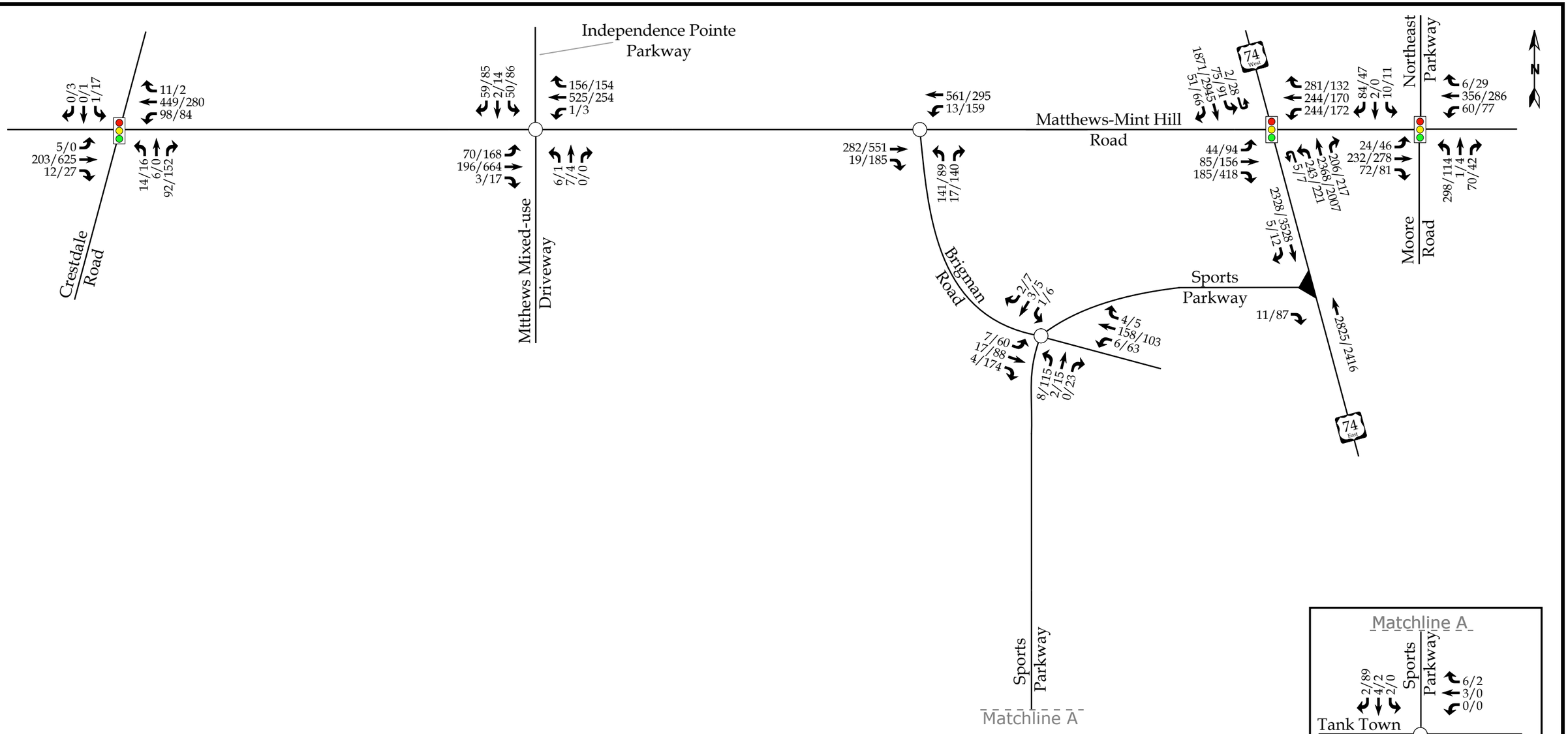
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2025 Projected
Peak Hour Traffic

Scale: Not to Scale | Figure 5a



LEGEND

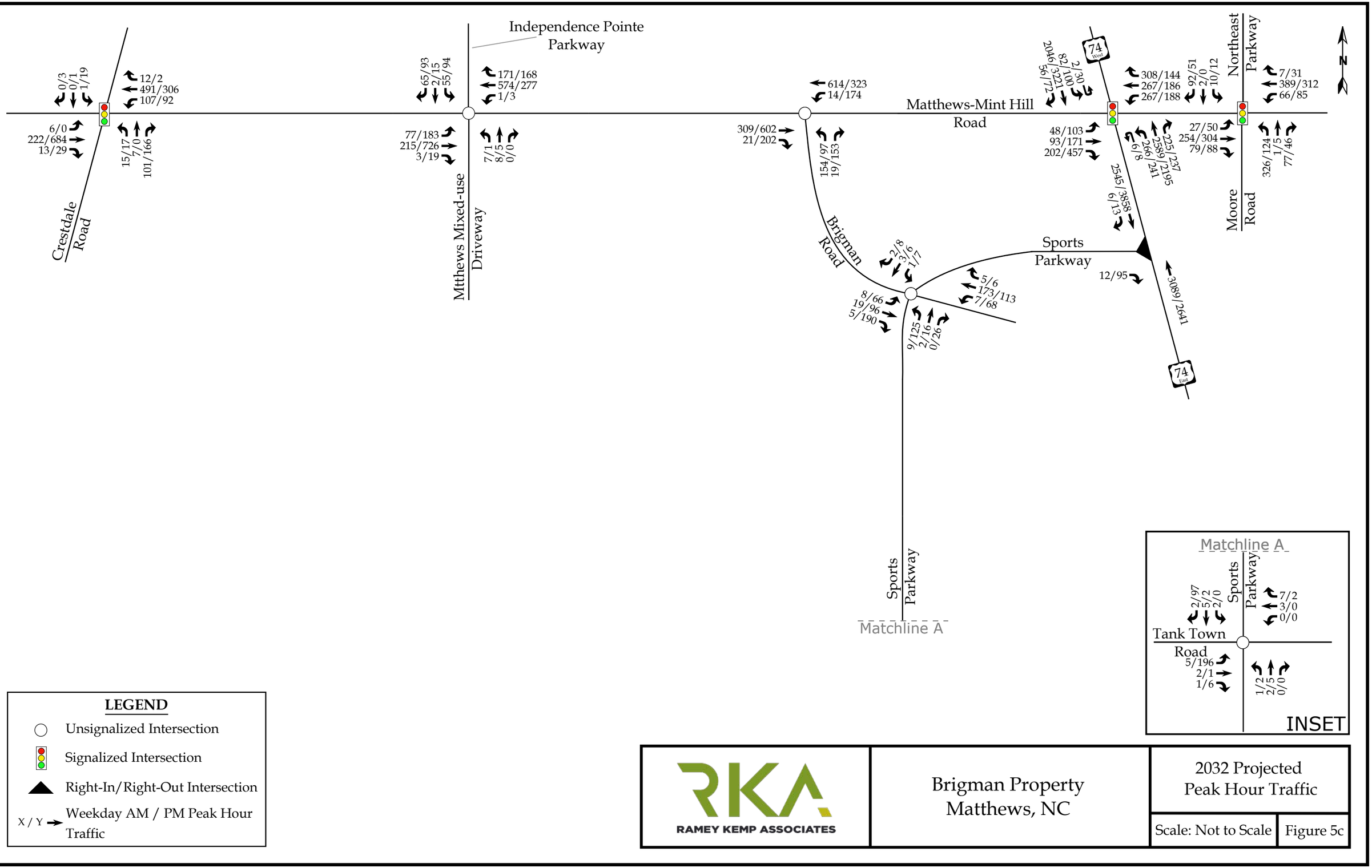
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2026 Projected
Peak Hour Traffic

Scale: Not to Scale | Figure 5b



LEGEND

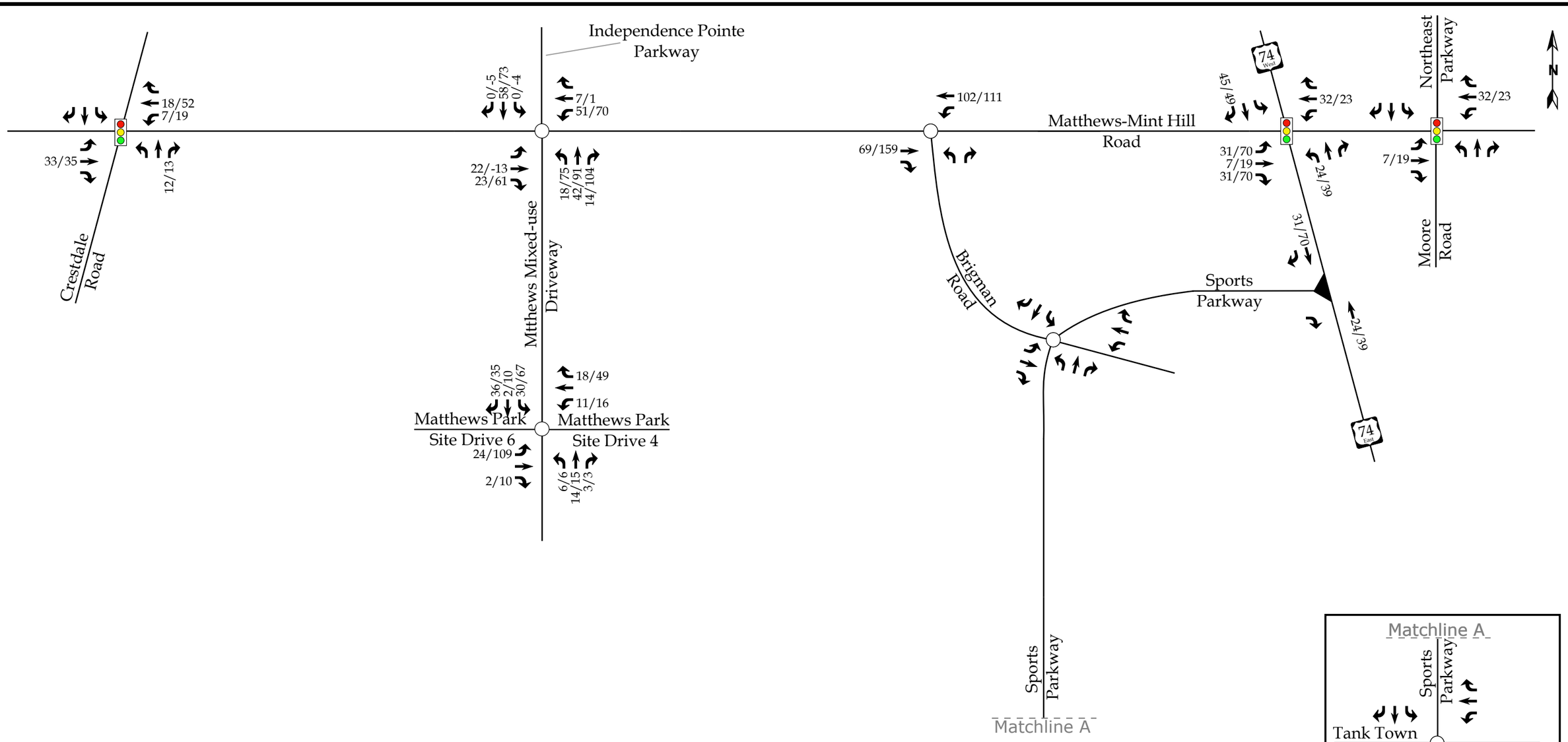
- ○ Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2032 Projected
Peak Hour Traffic

Scale: Not to Scale | Figure 5c



LEGEND

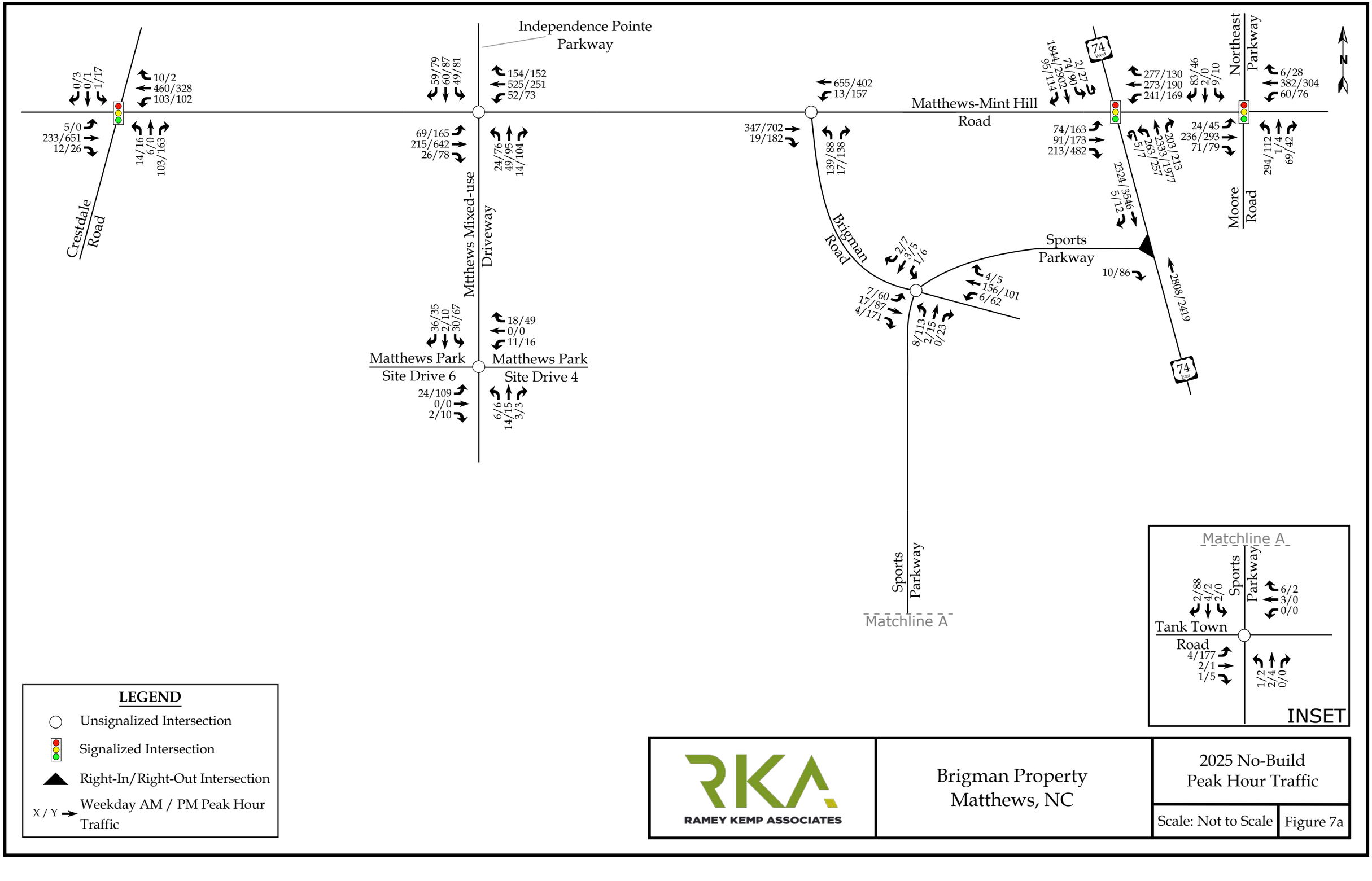
- ○ Unsignalized Intersection
- Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Adjacent Development Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Peak Hour Adjacent Development Trips

Scale: Not to Scale | Figure 6



LEGEND

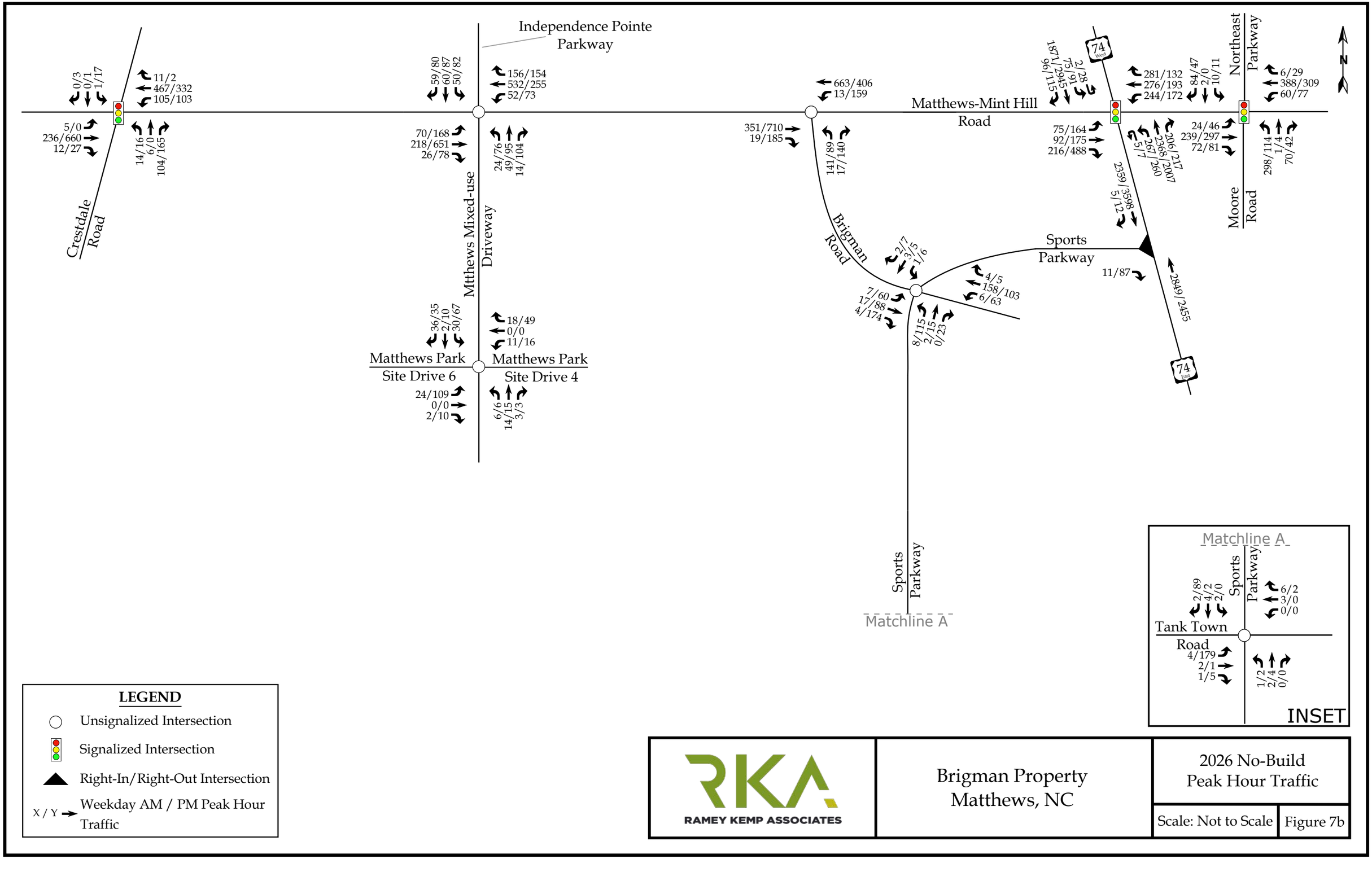
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2025 No-Build
Peak Hour Traffic

Scale: Not to Scale | Figure 7a



LEGEND

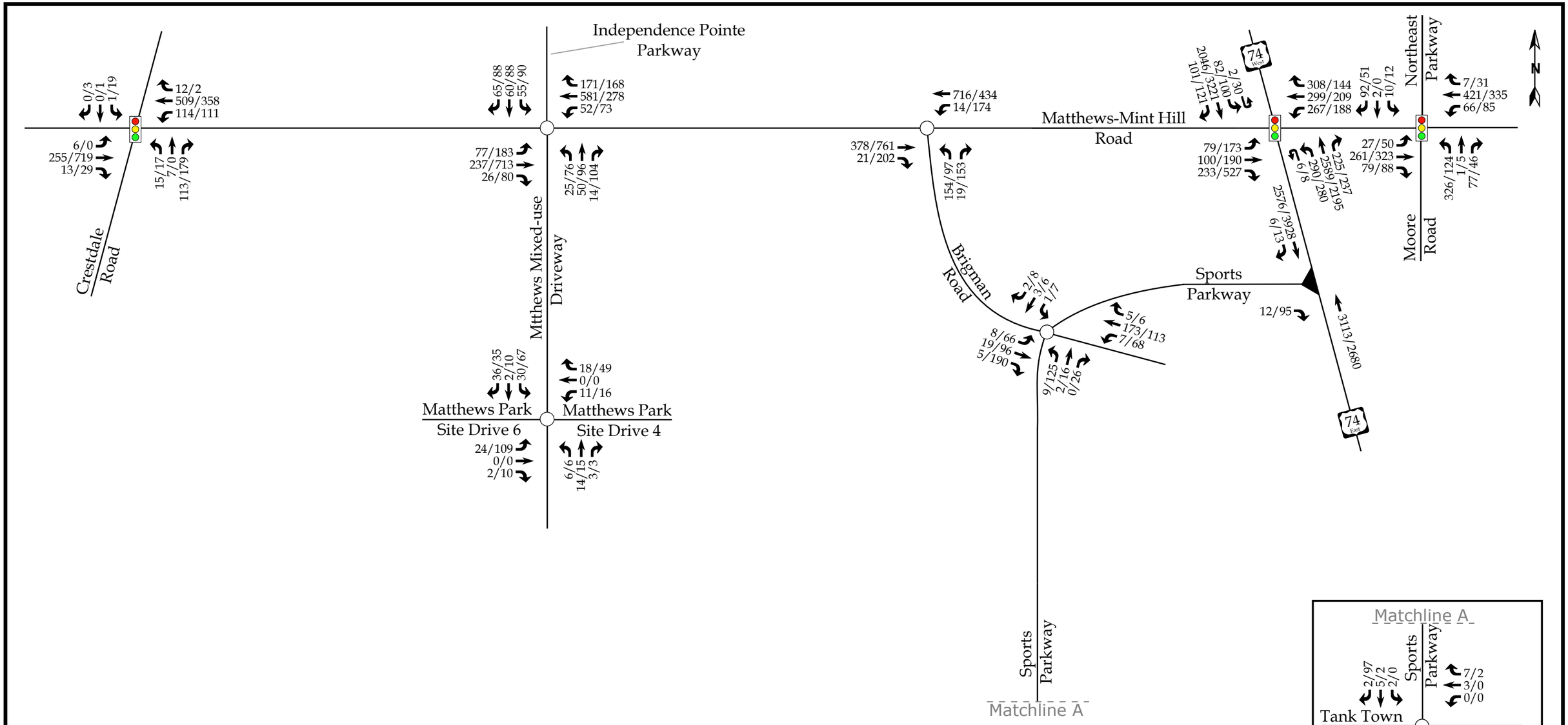
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

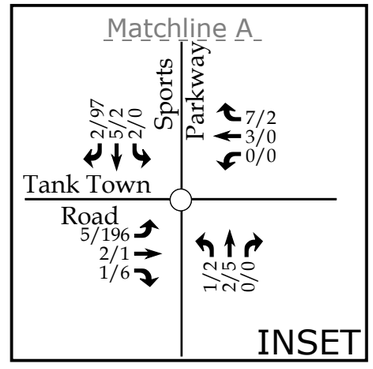
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2026 No-Build
Peak Hour Traffic

Scale: Not to Scale | Figure 7b





LEGEND

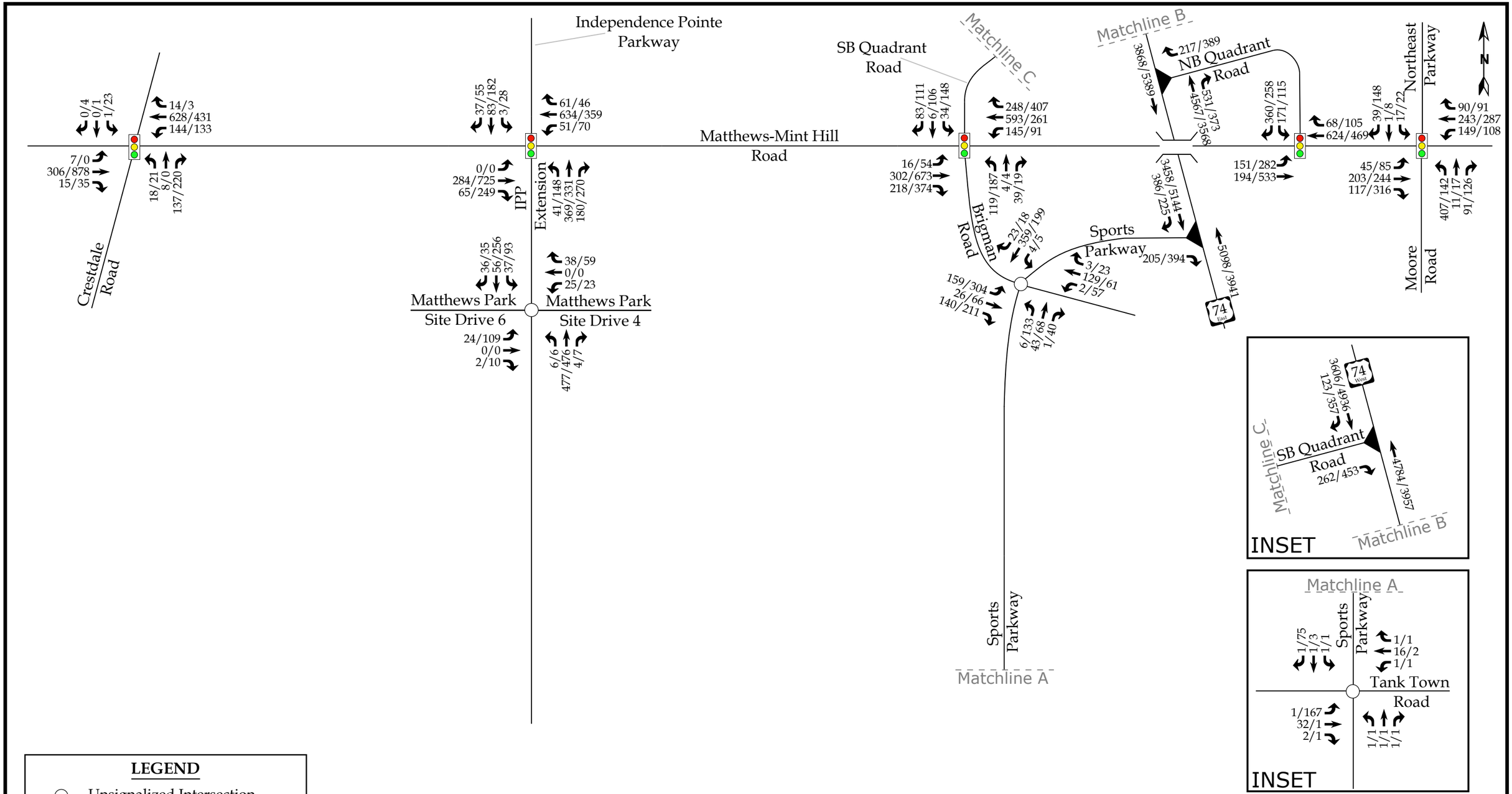
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2032 No-Build
Peak Hour Traffic

Scale: Not to Scale | Figure 7c



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2045 No-Build
Peak Hour Traffic

Scale: Not to Scale | Figure 7d

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

Buildout of the proposed development is expected to occur in three (3) phases with the densities described in Section 1.2 of this report and in the tables below. Phase 1 is expected to occur in 2025, Phase 2 in 2026, and full buildout by the year 2032 and is assumed to consist of the following land uses:

- 90,000 sq. ft. storage facility
- 120 room hotel
- 200 multifamily (low-rise)
- 814 multifamily (mid-rise)
- 106,250 sq. ft. of general office building
- 22,500 sq. ft. retail
- 11,500 sq. ft. of fast casual restaurant
- 7,500 sq. ft. brewery

Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 11th Edition.

Internal capture of trips between the office, residential, and retail/restaurant uses was considered in this study for each phase of buildout. Internal capture is the consideration for trips that will be made within the site between different land uses, so the vehicle technically never leaves the internal site but can still be considered as a trip to that specific land use. Internal capture typically only considers trips between residential, office, and retail/restaurant land uses. Internal capture rates were based on NCHRP Report 684 methodology and were approved during scoping by the Town and NCDOT.

Tables 3A-D, on the following pages, provide a summary of the trip generation potential for the site under 2025 (Phase 1) build, 2026 (Phase 2) build, 2032 full build, and 2045 full build with completion of the Silverline which is expected to provide a transit-reduction.

Table 3A: Trip Generation Summary – Phase 1 (2025)

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Multi-Family Housing (Mid-Rise) (221)	340 DU	1,575	32	106	81	52
Hotel (310)	120 Rooms	877	30	23	31	30
Retail (<40KSF) (822)	6 KSF	483	13	8	27	27
Fast-Casual Restaurant (930)	3 KSF	291	2	2	21	17
Brewery (971)	7.5 KSF	463	4	1	44	30
Total Trips		**3,689**	**81**	**140**	**204**	**156**
*Internal Capture (3% AM, 18% PM) **			*-3*	*-4*	*-38*	*-27*
Total External Trips			***78***	***136***	***166***	***129***

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 3,689 total site trips on the roadway network during a typical 24-hour weekday period under Phase 1 (2025) build out. Of the daily traffic volume, it is anticipated that 214 external trips (78 entering and 136 exiting) will occur during the weekday AM peak hour and 295 external trips (166 entering and 129 exiting) will occur during the weekday PM peak hour.

Table 3B: Trip Generation Summary – Phase 2 (2026)

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Multi-Family Housing (Low-Rise) (220)	185 DU	1,261	19	61	63	37
Multi-Family Housing (Mid-Rise) (221)	340 DU	1,575	32	106	81	52
Hotel (310)	120 Rooms	877	30	23	31	30
Retail (<40KSF) (822)	6 KSF	483	13	8	27	27
Fast-Casual Restaurant (930)	3 KSF	291	2	2	21	17
Brewery (971)	7.5 KSF	463	4	1	44	30
Total Trips		**4,950**	**100**	**201**	**267**	**193**
*Internal Capture (3% AM, 11% PM) **			*-3*	*-6*	*-30*	*-21*
Total External Trips			***97***	***195***	***237***	***172***

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 4,950 total site trips on the roadway network during a typical 24-hour weekday period under Phase 2 (2026) build out. Of the daily traffic volume, it is anticipated that 292 external trips (97 entering and 195 exiting) will occur during the weekday AM peak hour and 409 external trips (237 entering and 172 exiting) will occur during the weekday PM peak hour.

Table 3C: Trip Generation Summary – Full Buildout (2032) [Main Site]

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Main Site						
Multi-Family Housing (Low-Rise) (220)	200 DU	1,357	20	65	67	40
Multi-Family Housing (Mid-Rise) (221)	714 DU	3,359	70	233	170	109
Hotel (310)	120 Rooms	877	30	23	31	30
General Office Building (710)	106.25 KSF	1,223	155	21	30	145
Retail (<40KSF) (822)	14.5 KSF	842	22	15	50	51
Fast-Casual Restaurant (930)	9 KSF	874	6	7	62	51
Brewery (971)	7.5 KSF	463	4	1	44	30
Total Trips		**8,995**	**307**	**365**	**454**	**456**
*Internal Capture (9% AM, 16% PM) **			*-27*	*-33*	*-73*	*-73*
Total External Trips			***280***	***332***	***381***	***383***
Parcel T						
Mini-Warehouse (151)	90 KSF	131	5	3	7	7
Multi-Family Housing (Mid-Rise) (221)	100 DU	431	7	25	24	15
Retail (<40KSF) (822)	8 KSF	567	15	10	33	33
Fast-Casual Restaurant (930)	2.5 KSF	243	2	2	17	14
Total Trips		**1,372**	**29**	**40**	**81**	**69**
Total Trips (Combined)		**10,367**	**309**	**372**	**462**	**452**

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 10,367 total site trips on the roadway network during a typical 24-hour weekday period under full buildout (2032). Of the daily traffic volume, it is anticipated that 681 external trips (309 entering and 372 exiting) will occur during the weekday AM peak hour and 914 external trips (462 entering and 452 exiting) will occur during the weekday PM peak hour.

Table 3D: Trip Generation Summary – Full Buildout (2045)

Trip Generator	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
		Enter	Exit	Enter	Exit
External Trips [Main Site]	8,995	280	332	381	383
External Trips [Parcel T]	1,372	29	40	81	69
Total External Trips	**10,367**	**309**	**372**	**462**	**452**
Silver Line Transit Reduction (10%)	*-1,037*	*-31*	*-37*	*-46*	*-45*
Total Primary Trips	**9,330**	**278**	**335**	**416**	**407**

Based on scoping with the Town and NCDOT, it was determined that with the expected completion of the Silverline extension by the future 2045 analysis year that a transit reduction factor could be applied to the trip generation potential of the proposed development. A 10% transit reduction factor was determined to appropriately model the impact that this transit connection would have on the development's future site traffic. It is estimated that the proposed development will generate approximately 9,330 total site trips on the roadway network during a typical 24-hour weekday period under future 2045 build analysis conditions. Of the daily traffic volume, it is anticipated that 613 external trips (278 entering and 335 exiting) will occur during the weekday AM peak hour and 823 external trips (416 entering and 407 exiting) will occur during the weekday PM peak hour.

4.2. Site Trip Distribution and Assignment

Trip distribution percentages used in assigning site traffic for this development were estimated based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment.

Table 4 below, shows the expected regional distribution of site trips for each of the analysis scenarios.

Table 4: Site Trip Distribution Matrix

		Phase 1 (2025)		Phase 2 (2025)				Full Build Out (2032)							
								Main Site				Parcel T			
Route	To/From	Residential	Commercial	Residential	Commercial	Residential [Greylock]	Commercial [Greylock]	Residential	Commercial	Residential [Greylock]	Commercial [Greylock]	Residential	Commercial	Residential [Greylock]	Commercial [Greylock]
US 74	East	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	West	25%	15%	25%	15%	25%	15%	25%	15%	25%	15%	25%	15%	25%	15%
Matthews Mint-Hill Road	East	5%	15%	5%	15%	5%	15%	5%	15%	5%	15%	5%	15%	5%	15%
	West	20%	15%	20%	15%	20%	15%	20%	15%	20%	15%	20%	15%	20%	15%
Crestdale Road	South	10%	15%	10%	15%			5%	10%			5%	5%		
Independence Pointe Pkwy	North	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Tank Town Road	West							5%	5%	5%	5%	5%	10%	5%	10%
Greylock Ridge Road Ext.	West					10%	15%			5%	10%			5%	5%

It should be noted that the development of Parcel T is expected to occur as part of full buildout of the site; however, the land uses associated with this parcel have a separate distribution due to this parcel's location within the overall development.

Regional site trip distributions are provided with and without the completion of the planned Greylock Ridge Road Extension. Under analysis scenarios with this completed roadway, traffic from Crestdale Road is diverted through this new roadway to access the site south of Matthews Mint-Hill Road.

The completion of an east-west connector road, referred to as Public Road A, connecting the future Independence Pointe Parkway Extension and Sports Parkway is expected to occur as part of full buildout if this connection has not already been completed by the neighboring development. Based on coordination with the Town and NCDOT, the existence of this

connection would divert traffic from Crestdale Road to access the site from Sports Parkway via Tank Town Road.

The site trip distributions for each analysis scenario are shown in the following figures:

Phase 1 (2025)

- Figure 8A – Residential Site Trip Distribution
- Figure 8B – Commercial Site Trip Distribution

Phase 2 (2026)

- Figure 9A – Residential Site Trip Distribution
- Figure 9B – Residential Site Trip Distribution – w/ Greylock Extension
- Figure 9C – Commercial Site Trip Distribution
- Figure 9D – Commercial Site Trip Distribution – w/ Greylock Extension

Full Build (2032)

Main Site

- Figure 10A – Residential Site Trip Distribution
- Figure 10B – Residential Site Trip Distribution – w/ Greylock Extension
- Figure 10C – Commercial Site Trip Distribution
- Figure 10D – Commercial Site Trip Distribution – w/ Greylock Extension

Parcel T

- Figure 11A – Residential Site Trip Distribution
- Figure 11B – Residential Site Trip Distribution – w/ Greylock Extension
- Figure 11C – Commercial Site Trip Distribution
- Figure 11D – Commercial Site Trip Distribution – w/ Greylock Extension

2045

Main Site

- Figure 12A – 2045 Residential Site Trip Distribution
- Figure 12B – 2045 Residential Site Trip Distribution – w/ Greylock Extension
- Figure 12C - 2045 Commercial Site Trip Distribution
- Figure 12D – 2045 Commercial Site Trip Distribution – w/Greylock Extension

Parcel T

- Figure 13A – 2045 Residential Site Trip Distribution
- Figure 13B – 2045 Residential Site Trip Distribution – w/ Greylock Extension
- Figure 13C – 2045 Commercial Site Trip Distribution
- Figure 13D – 2045 Commercial Site Trip Distribution – w/ Greylock Extension

Refer to the following figures for the corresponding site trip assignment for each analysis scenario:

Phase 1 (2025)

- Figure 14A – Residential Site Trip Assignment
- Figure 14B – Commercial Site Trip Assignment

Phase 2 (2026)

- Figure 16A – Residential Site Trip Assignment
- Figure 16B – Commercial Site Trip Assignment
- Figure 18A – Residential Site Trip Assignment – w/ Greylock Extension
- Figure 18B – Commercial Site Trip Assignment – w/ Greylock Extension

Full Build (2032)

Main Site

- Figure 20A – Residential Site Trip Assignment (Main Site)
- Figure 20B – Commercial Site Trip Assignment (Main Site)
- Figure 22A – Residential Site Trip Assignment (Main Site) – w/ Greylock Extension
- Figure 22B – Commercial Site Trip Assignment (Main Site) – w/ Greylock Extension

Parcel T

- Figure 20C – Residential Site Trip Assignment (Parcel T)
- Figure 20D – Commercial Site Trip Assignment (Parcel T)
- Figure 22C - Residential Site Trip Assignment (Parcel T) – w/ Greylock Extension
- Figure 22D - Commercial Site Trip Assignment (Parcel T) – w/ Greylock Extension

2045

Main Site

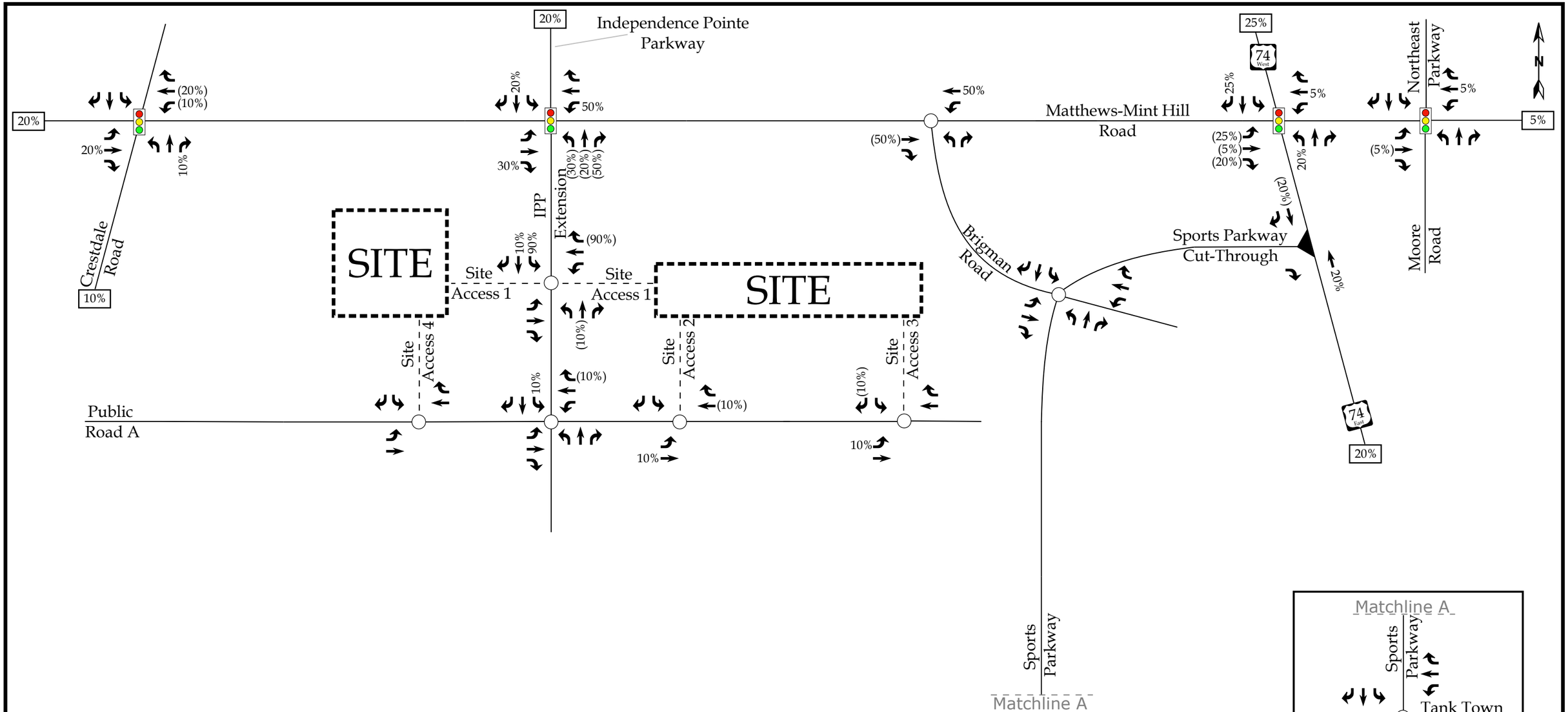
- Figure 24A – 2045 Residential Site Trip Assignment
- Figure 24B – 2045 Commercial Site Trip Assignment
- Figure 26A – 2045 Residential Site Trip Assignment – w/ Greylock Extension
- Figure 26B – 2045 Commercial Site Trip Assignment – w/Greylock Extension

Parcel T

- Figure 24C – 2045 Residential Site Trip Assignment
- Figure 24D – 2045 Commercial Site Trip Assignment
- Figure 26C – 2045 Residential Site Trip Assignment – w/ Greylock Extension
- Figure 26D – 2045 Commercial Site Trip Assignment – w/ Greylock Extension

The total site trips were determined by adding the primary site trips for the residential and commercial land uses. Refer to the following figures for the total peak hour site trips at the study intersections for each analysis scenario:

- Figure 15 – Phase 1 (2025) Total Site Trip Assignment
- Figure 17 – Phase 2 (2026) Total Site Trip Assignment
- Figure 19 – Phase 2 (2026) Total Site Trip Assignment – w/ Greylock Extension
- Figure 21 – Full Build (2032) Total Site Trip Assignment
- Figure 23 – Full Build (2032) Total Site Trip Assignment – w/ Greylock Extension
- Figure 25 – 2045 Total Site Trip Assignment
- Figure 27 – 2045 Total Site Trip Assignment – w/ Greylock Extension



LEGEND

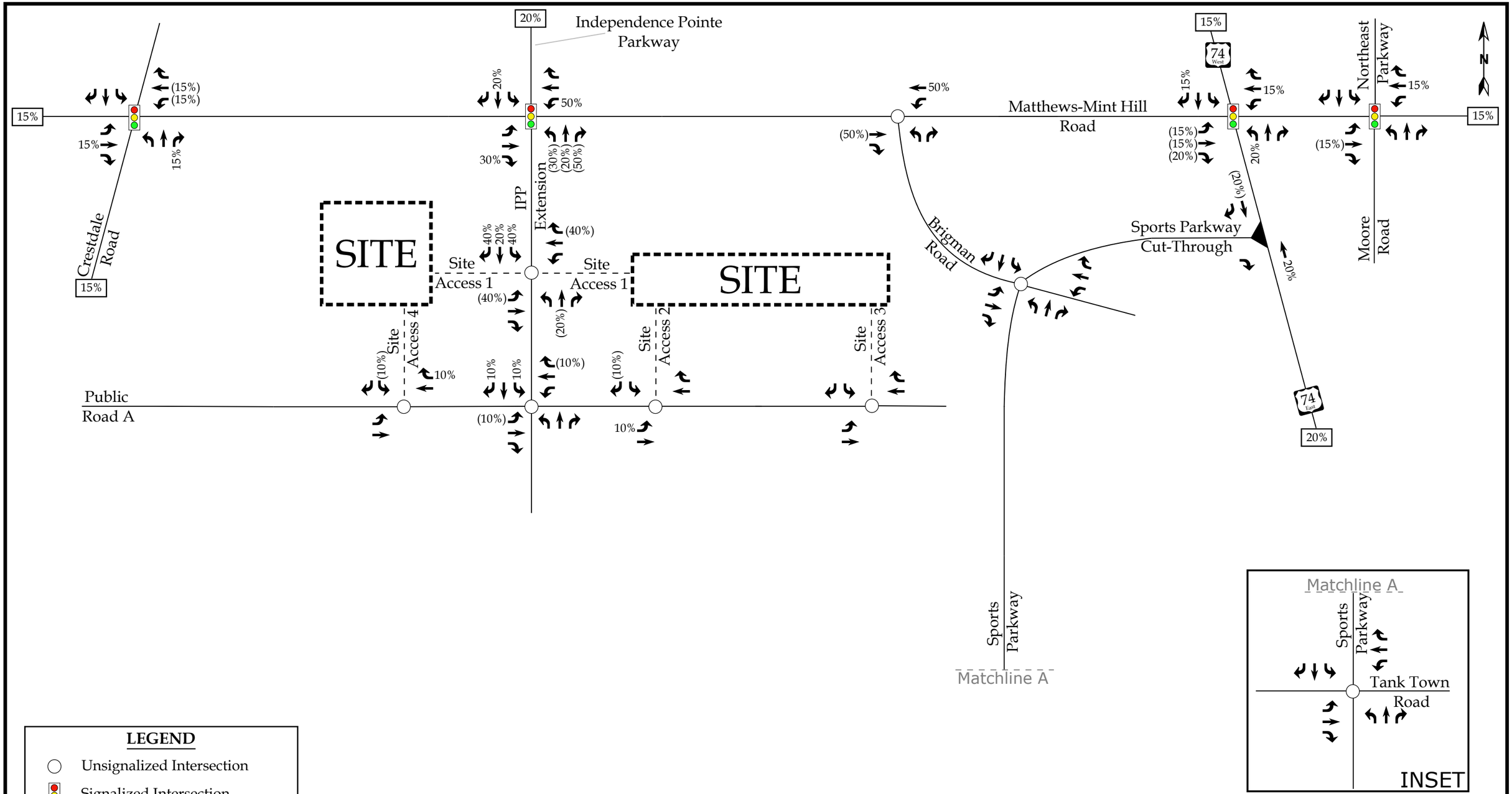
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution

RKA
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Distribution
(Phase 1)

Scale: Not to Scale | Figure 8a



LEGEND

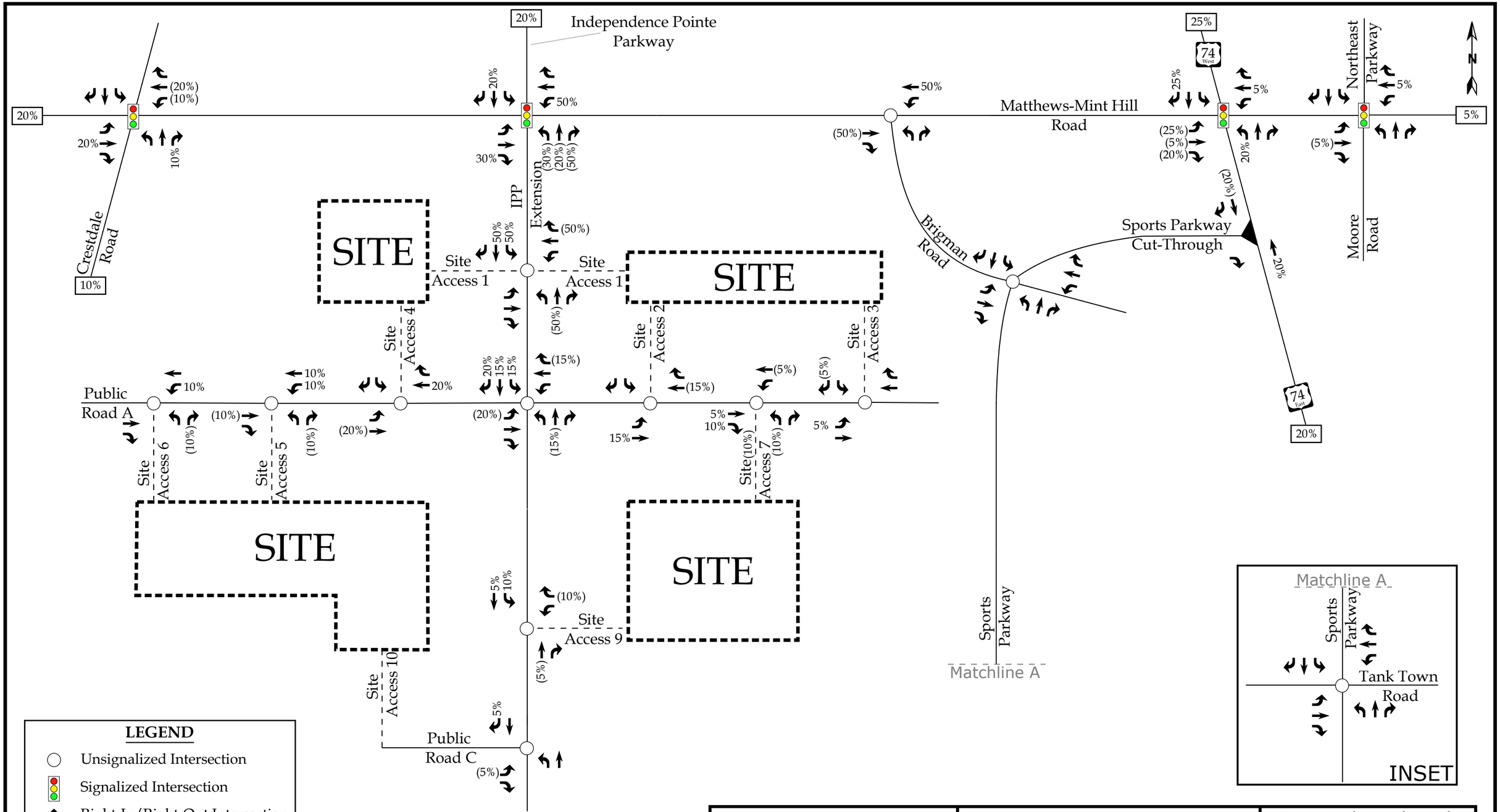
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial Site Trip Distribution (Phase 1)

Scale: Not to Scale | Figure 8b

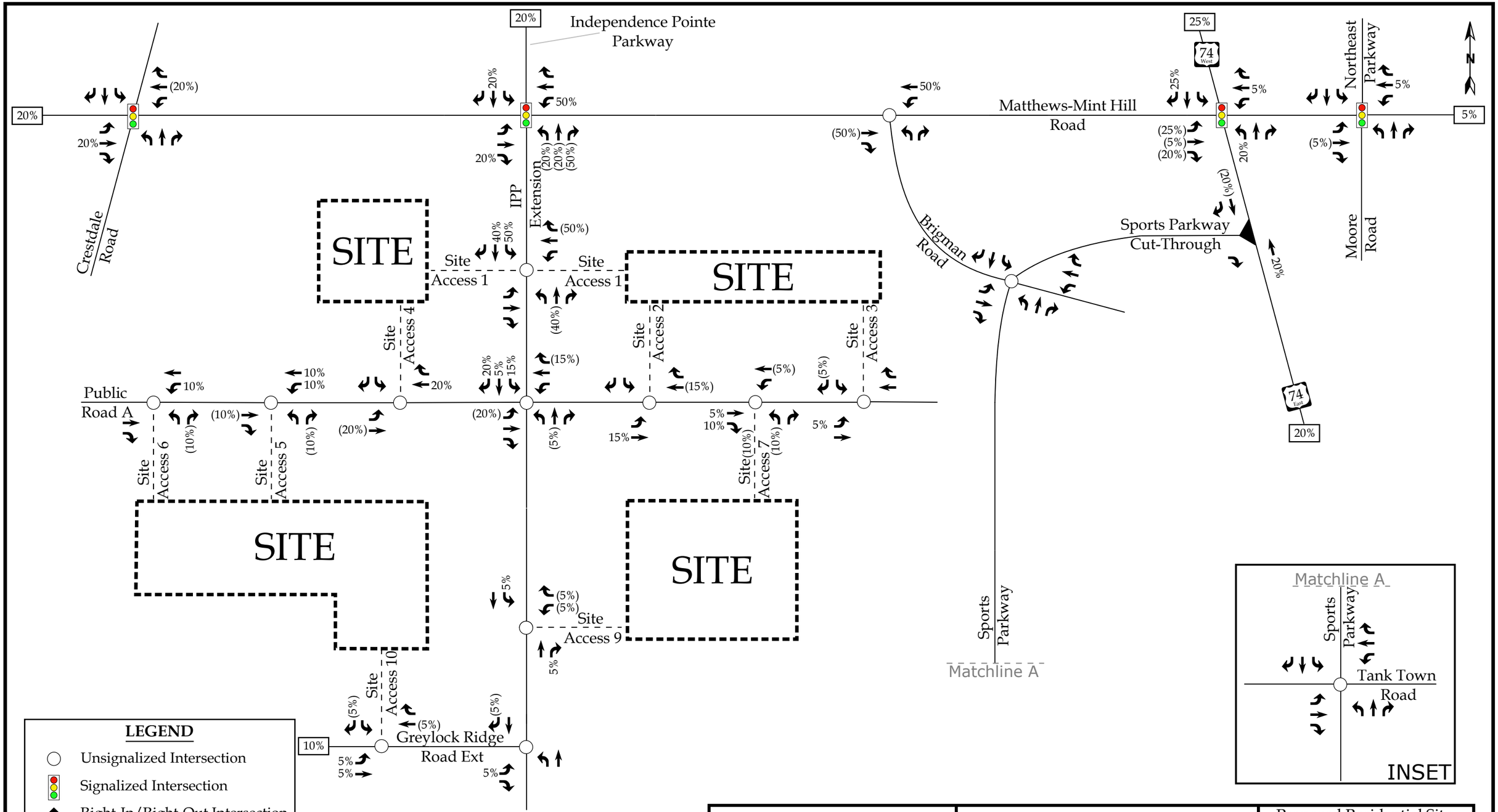


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential Site Trip Distribution (Phase 2)

Scale: Not to Scale | Figure 9a

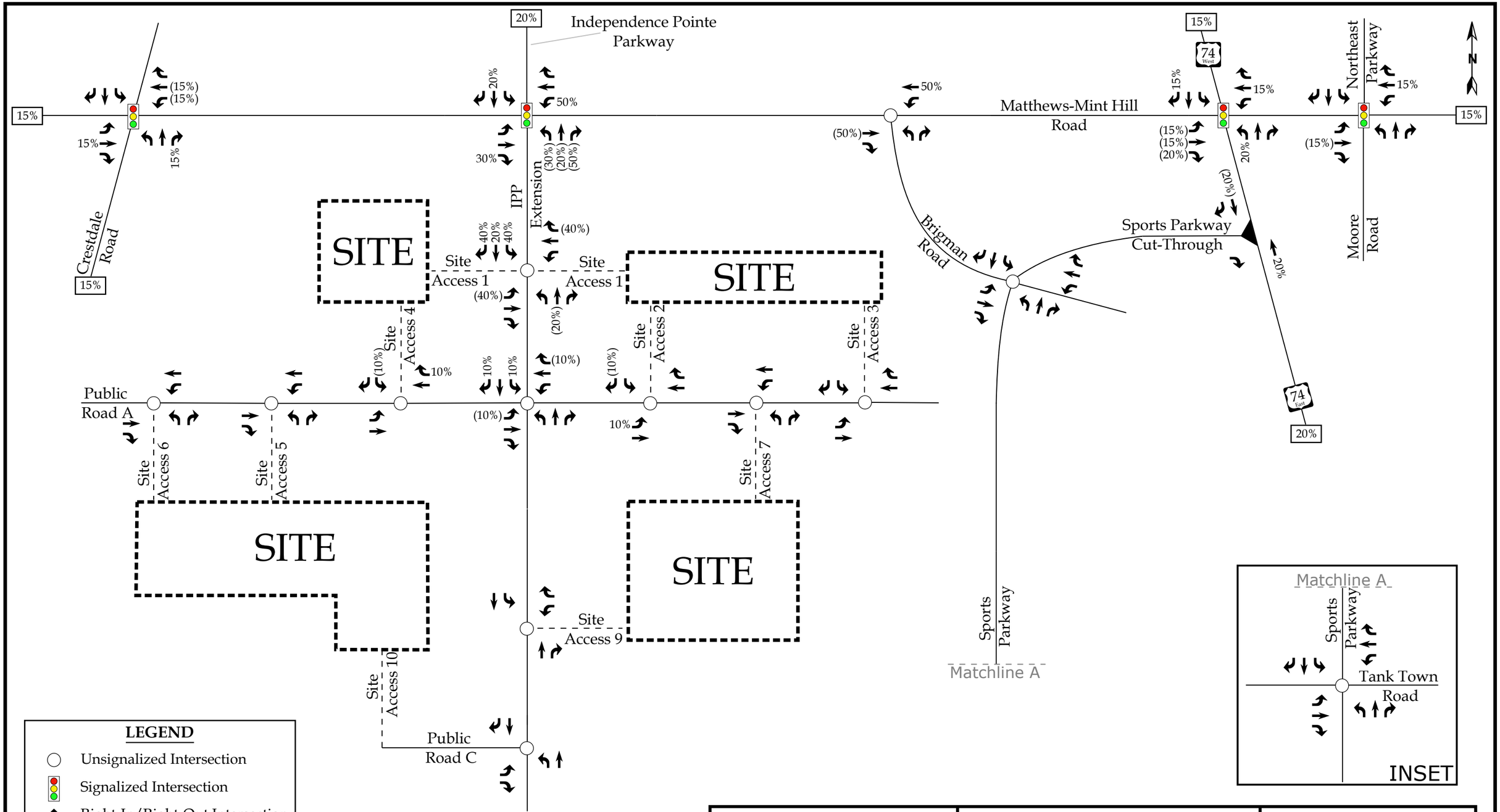


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential Site Trip Distribution (Phase 2) [Greylock Extension]

Scale: Not to Scale | Figure 9b

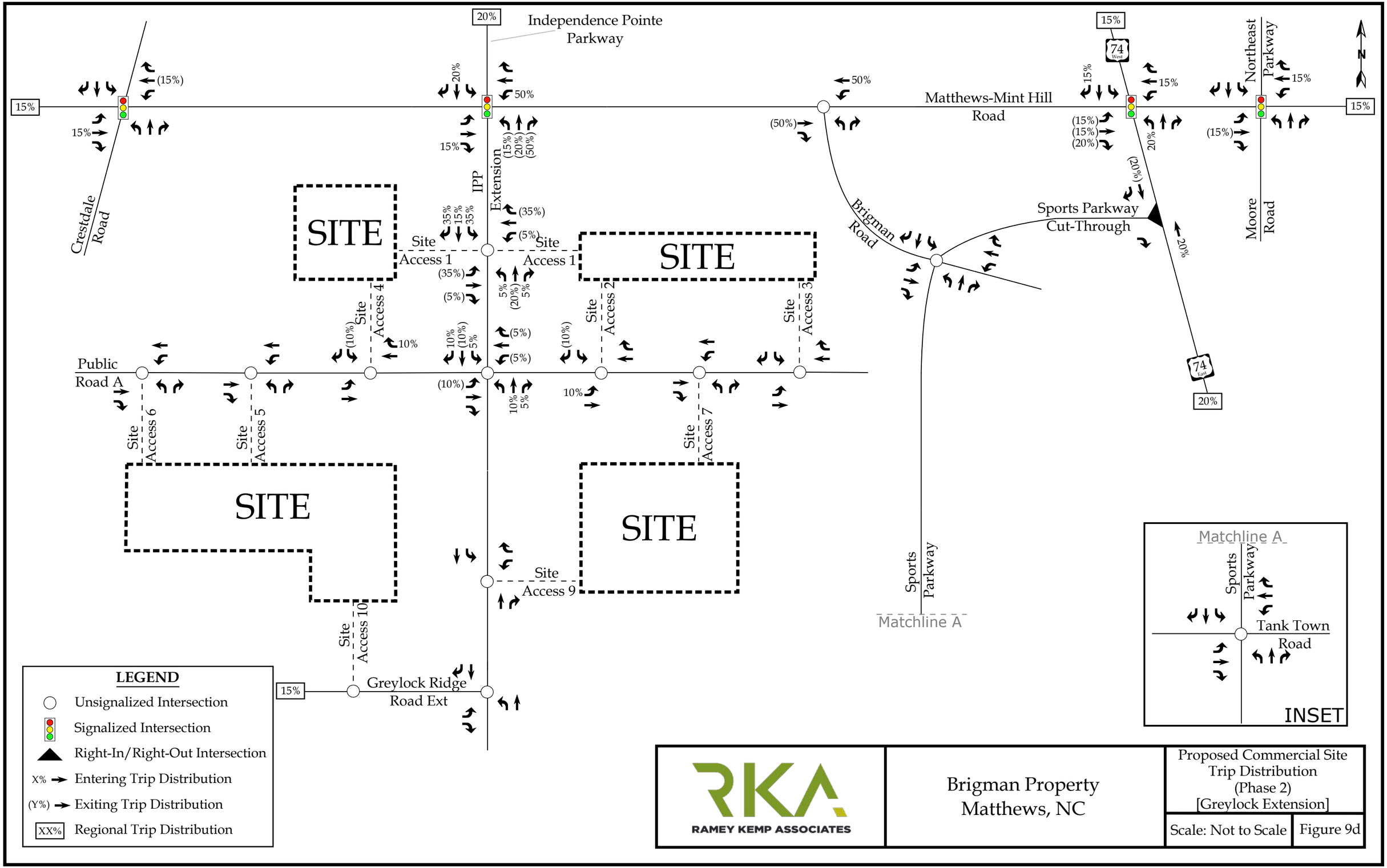


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial Site Trip Distribution (Phase 2)

Scale: Not to Scale | Figure 9c



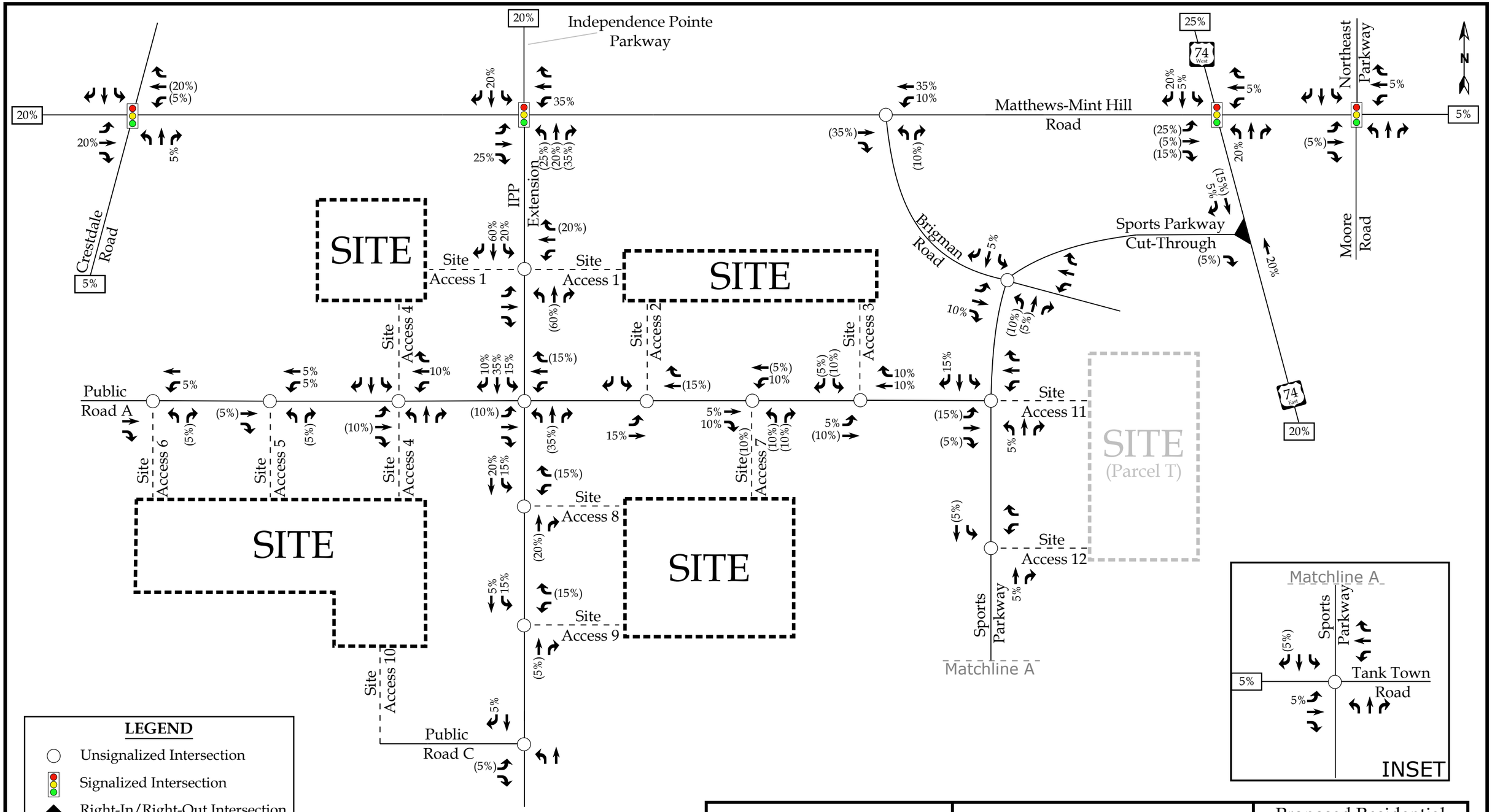
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial Site
Trip Distribution
(Phase 2)
[Greylock Extension]

Scale: Not to Scale

Figure 9d

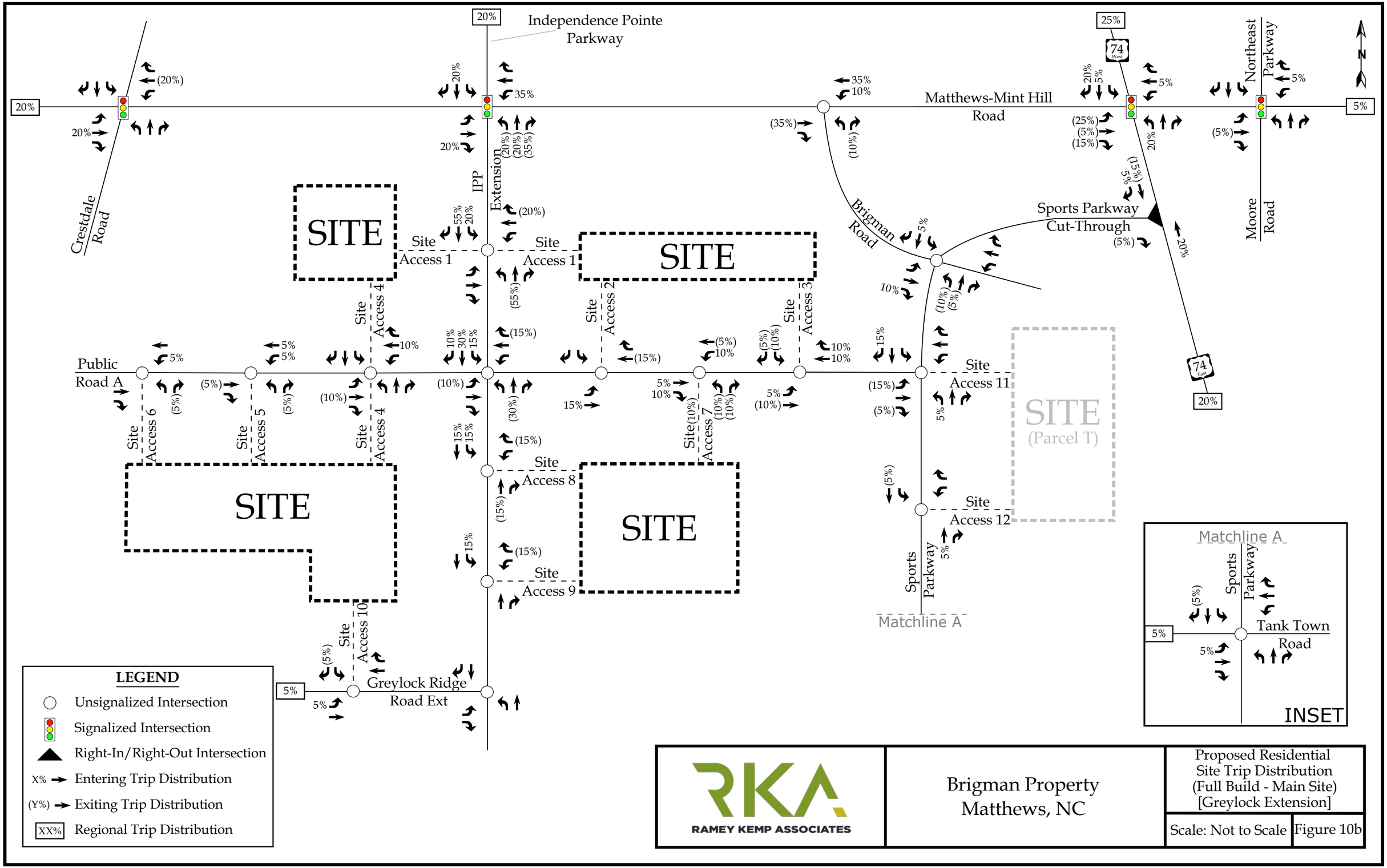


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Distribution
(Full Build - Main Site)

Scale: Not to Scale | Figure 10a

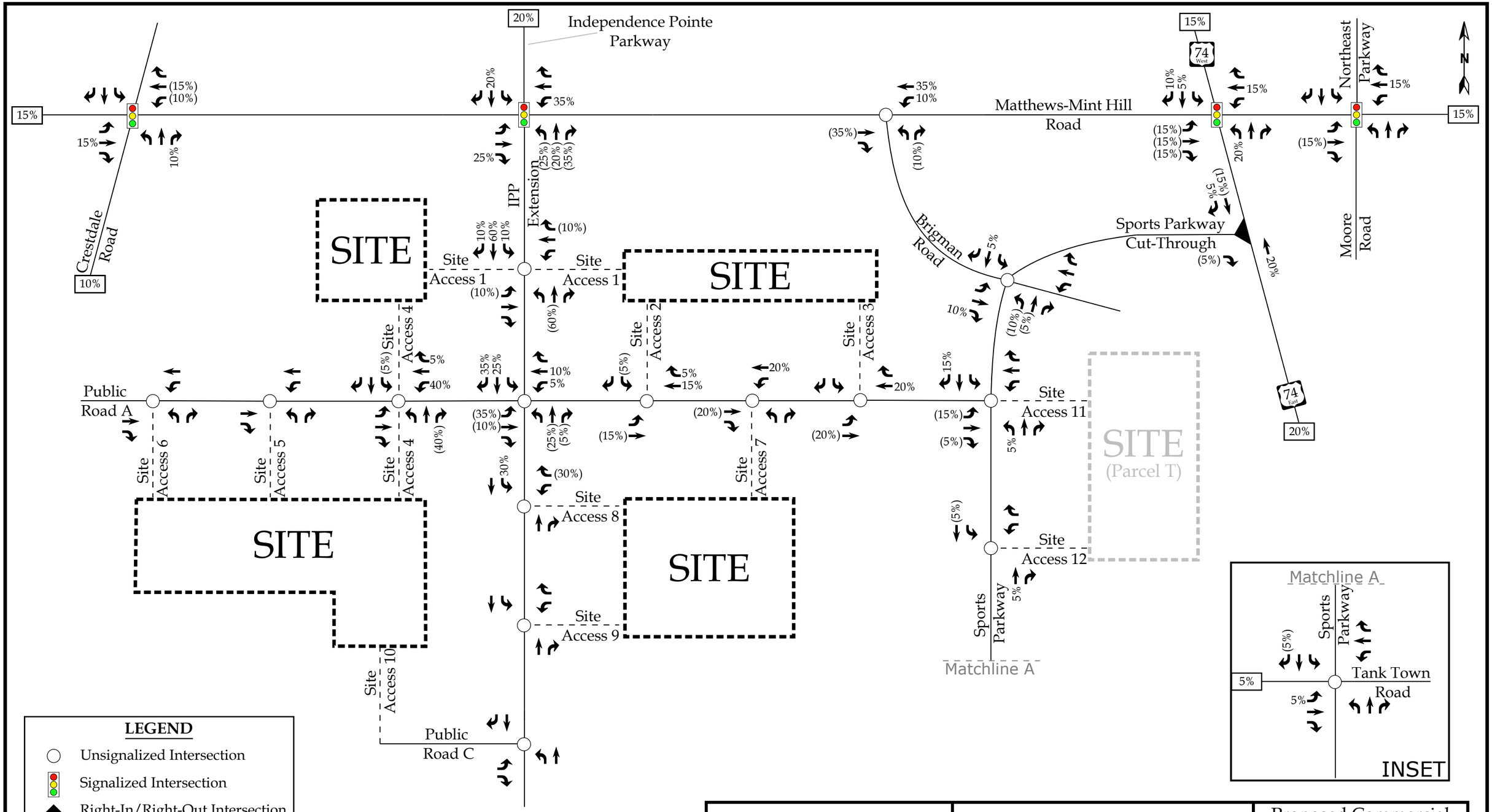


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Distribution
(Full Build - Main Site)
[Greylock Extension]

Scale: Not to Scale | Figure 10b



RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial
Site Trip Distribution
(Full Build - Main Site)

Scale: Not to Scale | Figure 10c

Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway Cut-Through
Northeast Parkway
Moore Road
Public Road A
Greylock Ridge Road Ext
Sports Parkway
Tank Town Road
SITE
SITE
SITE
SITE
(Parcel T)
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Matchline A
INSET

LEGEND

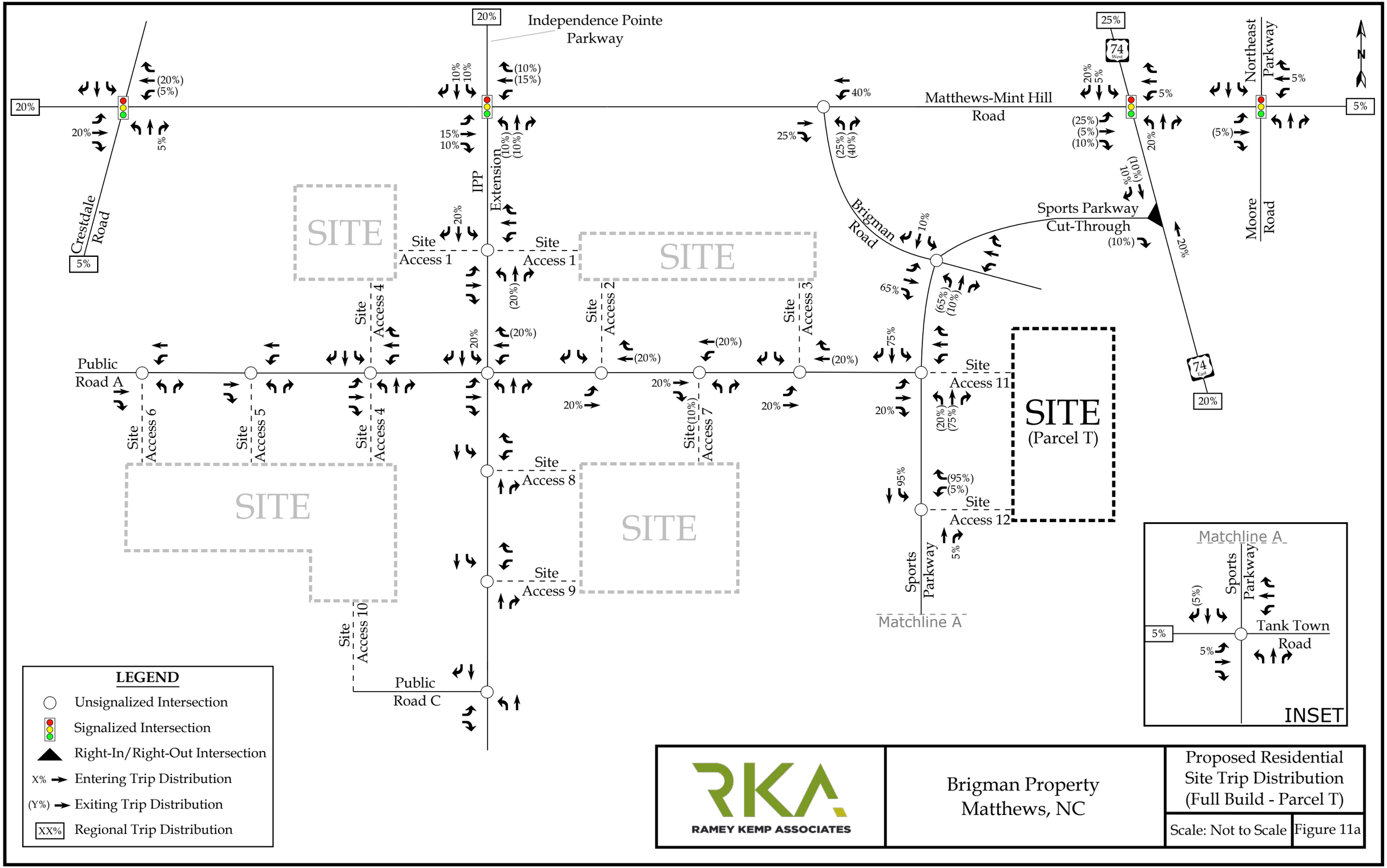
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution

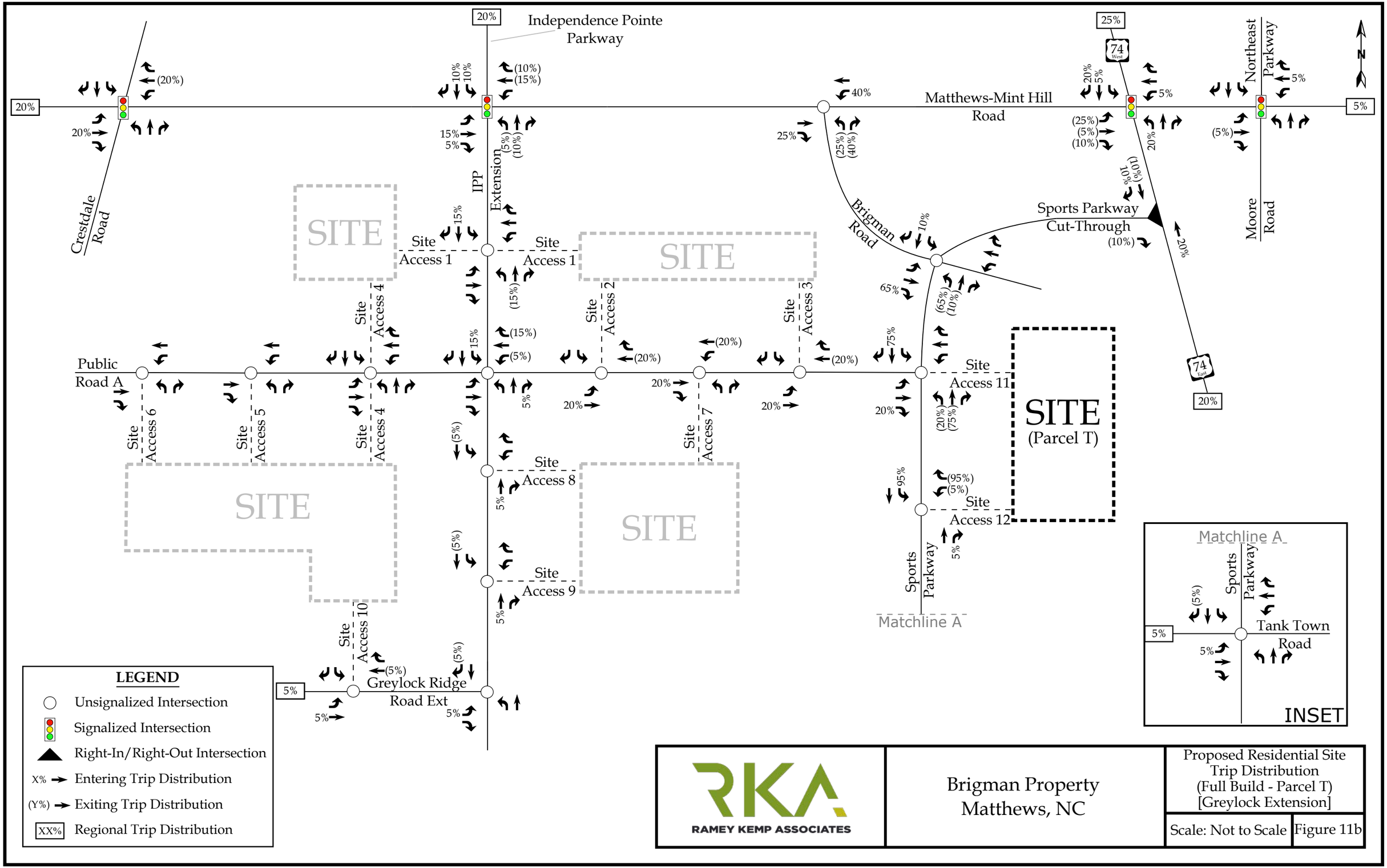
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial Site
Trip Distribution
(Full Build - Main Site)
[Greylock Extension]

Scale: Not to Scale | Figure 10d


20%
Independence Pointe Parkway
25%
74 West
Northeast Parkway
5%
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
SITE
Site Access 1
Site Access 1
SITE
Brigman Road
Sports Parkway Cut-Through
Moore Road
74 East
Site Access 4
Site Access 2
Site Access 3
Public Road A
Site Access 6
Site Access 5
Site Access 4
Site Access 7
Site Access 11
SITE (Parcel T)
Site Access 8
SITE
SITE
Site Access 9
Site Access 10
Public Road C
Site Access 12
Sports Parkway
Matchline A
Matchline A
Tank Town Road
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X% Entering Trip Distribution
(Y%) Exiting Trip Distribution
XX% Regional Trip Distribution
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Residential
Site Trip Distribution
(Full Build - Parcel T)
Scale: Not to Scale
Figure 11a



RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential Site Trip Distribution
(Full Build - Parcel T)
[Greylock Extension]

Scale: Not to Scale | Figure 11b

Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway Cut-Through
Northeast Parkway
Moore Road
Public Road A
Public Road C
Sports Parkway
Tank Town Road
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
SITE
SITE
SITE
SITE
SITE (Parcel T)
Matchline A
Matchline A
INSET

LEGEND

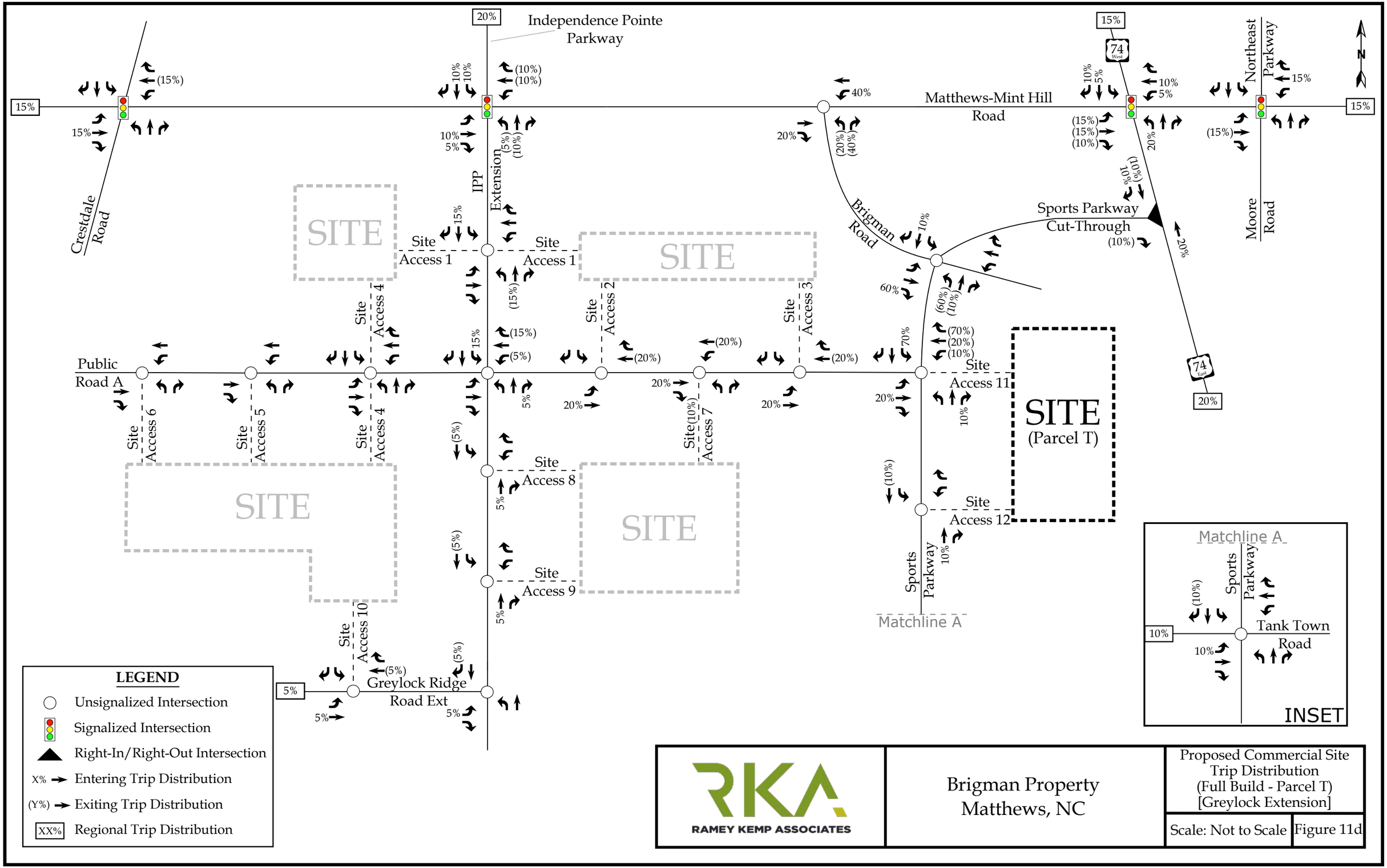
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial
Site Trip Distribution
(Full Build - Parcel T)

Scale: Not to Scale | Figure 11c

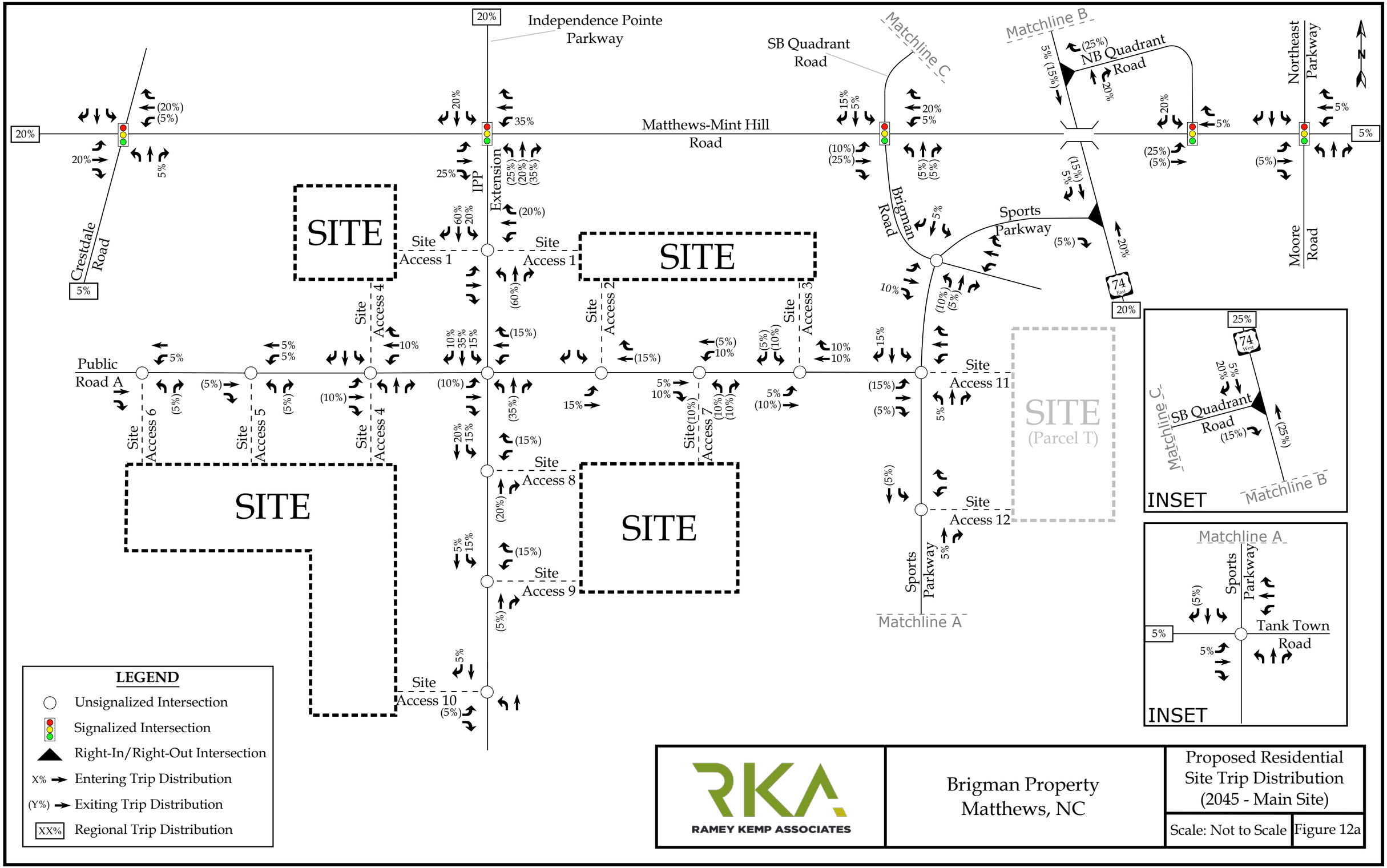


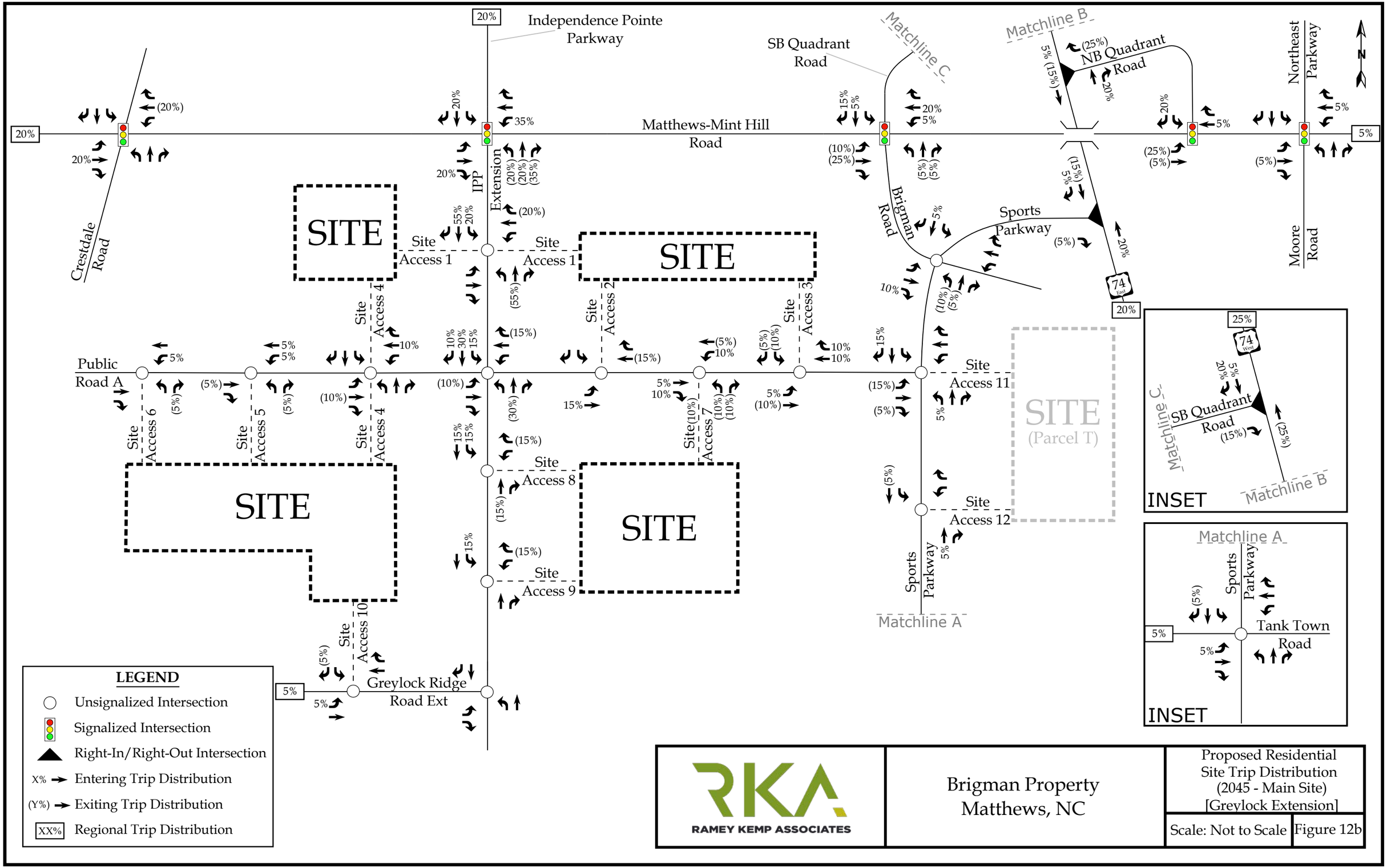
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial Site
Trip Distribution
(Full Build - Parcel T)
[Greylock Extension]

Scale: Not to Scale | Figure 11d


Independence Pointe Parkway
SB Quadrant Road
Matchline C
Matchline B
NB Quadrant Road
Northeast Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway
Moore Road
SITE
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Public Road A
SITE (Parcel T)
74 East
74 West
INSET
Tank Town Road
Matchline A
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X% Entering Trip Distribution
(Y%) Exiting Trip Distribution
XX% Regional Trip Distribution
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Residential
Site Trip Distribution
(2045 - Main Site)
Scale: Not to Scale
Figure 12a

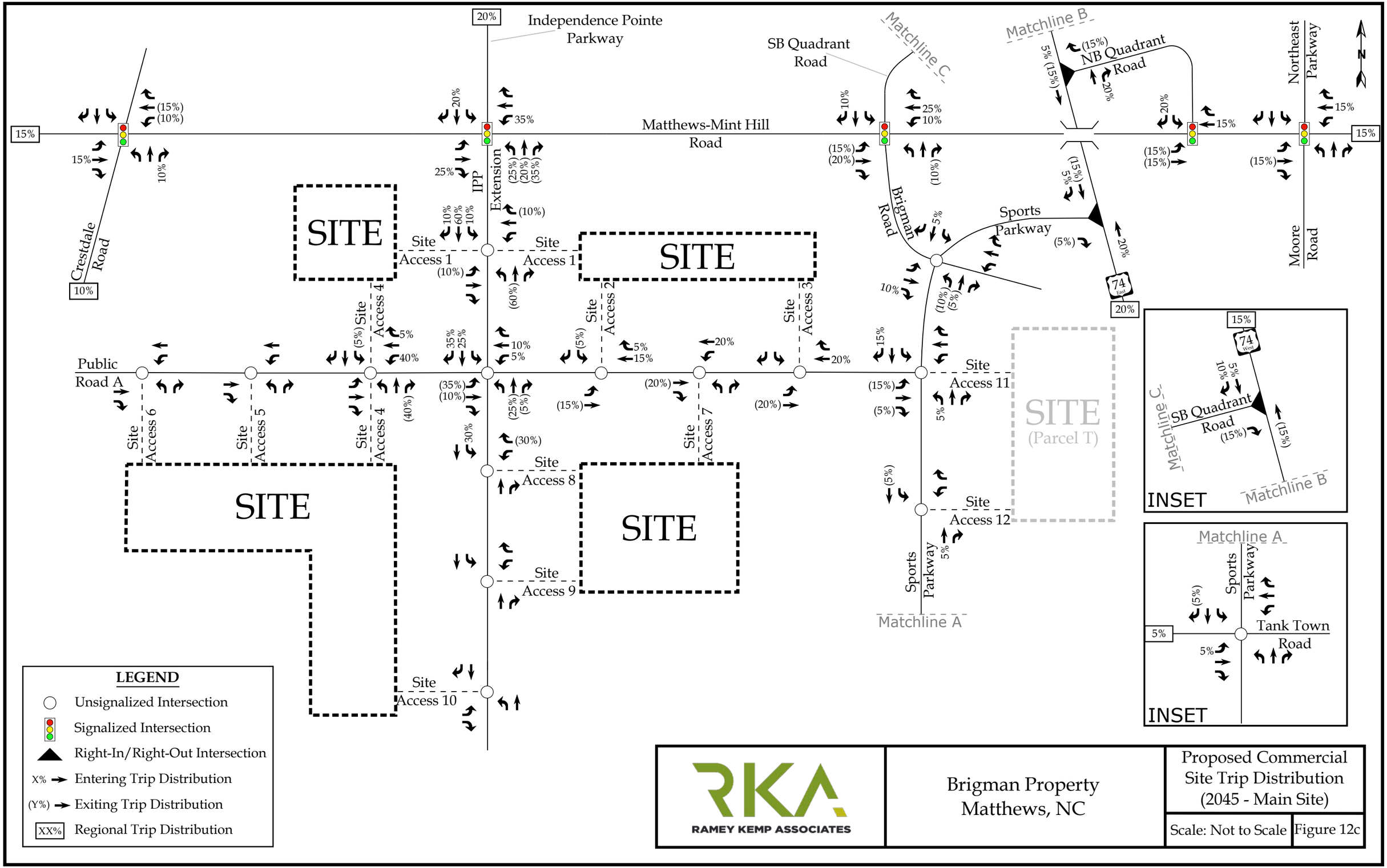


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Distribution
(2045 - Main Site)
[Greylock Extension]

Scale: Not to Scale | Figure 12b

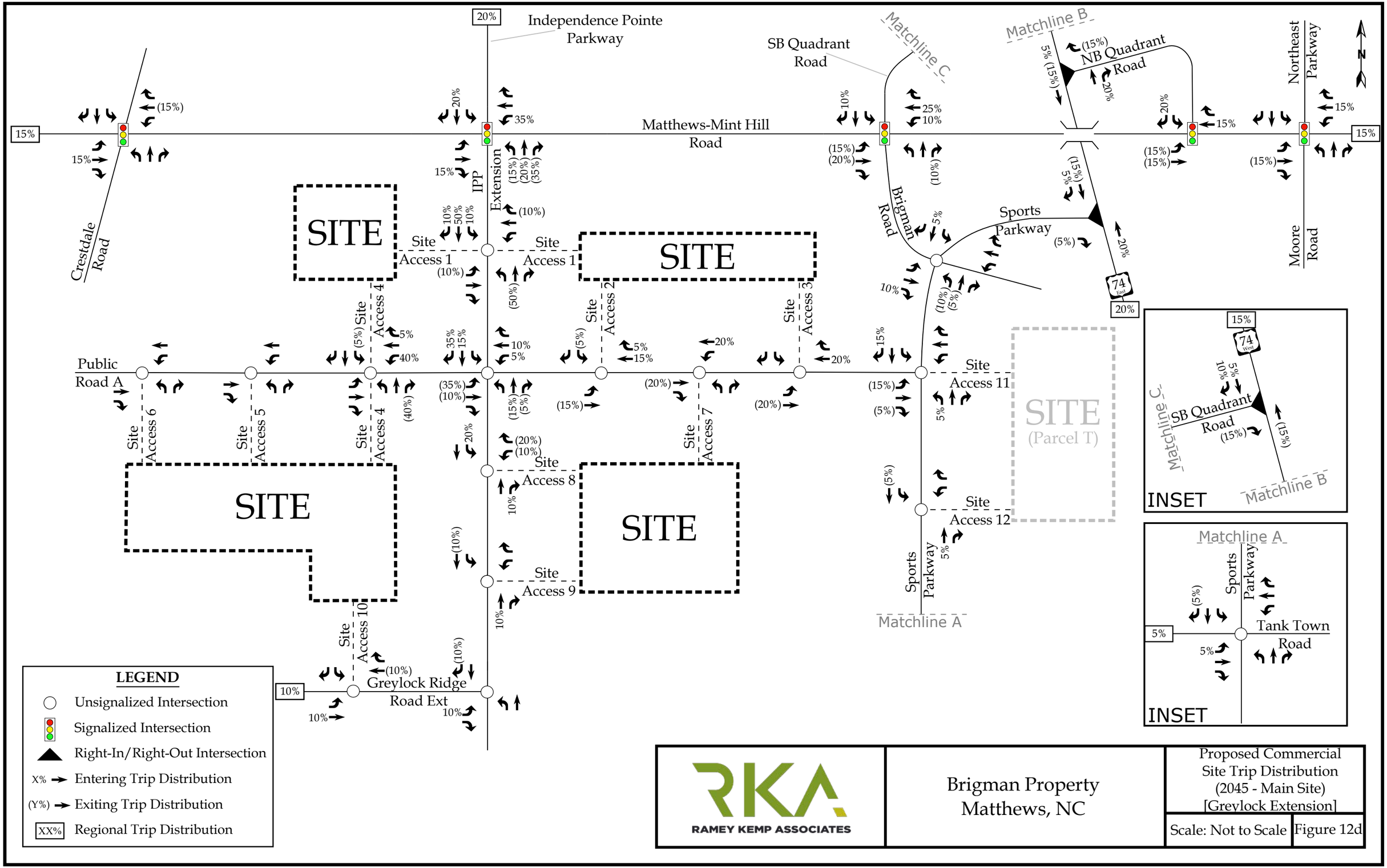


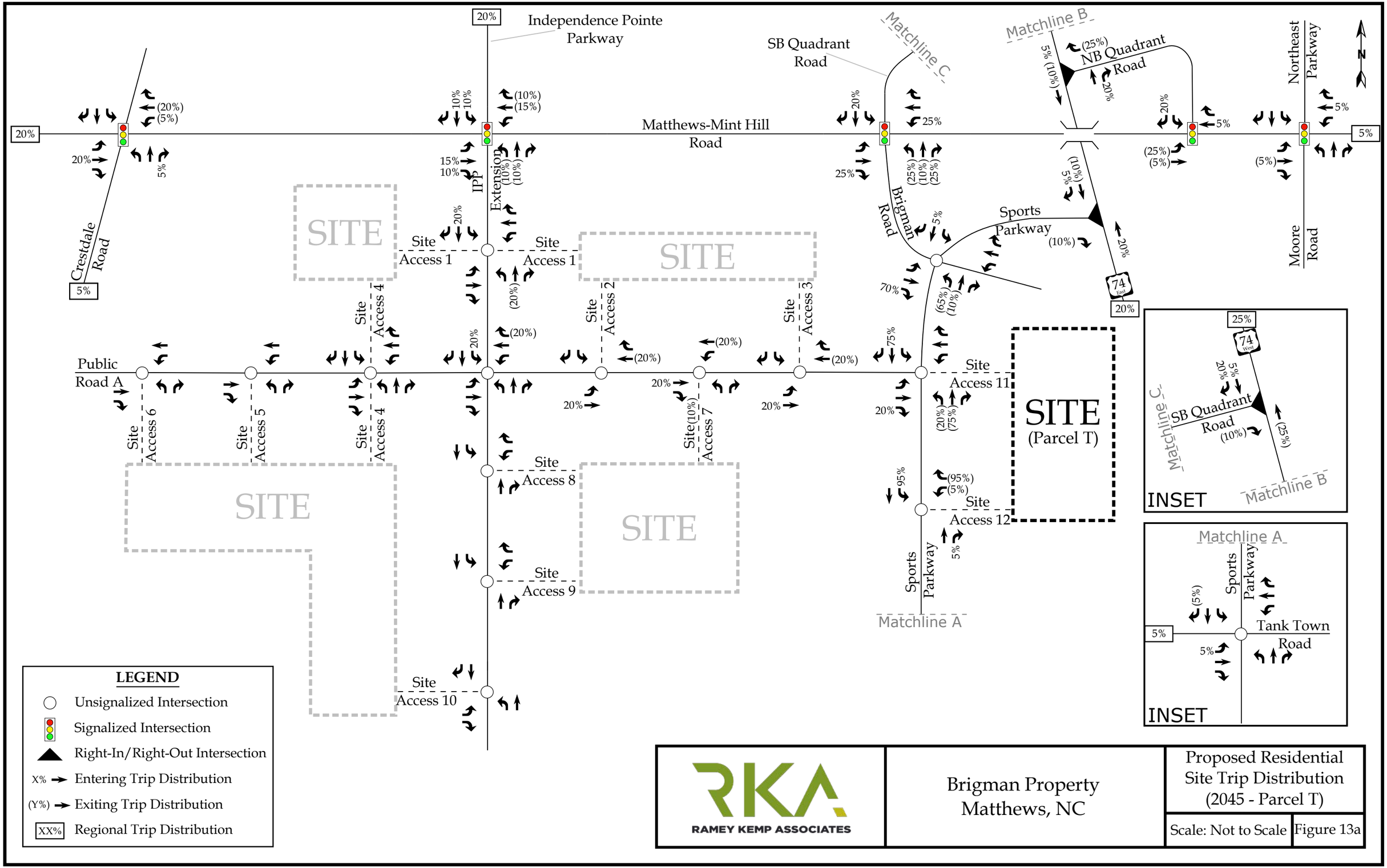
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial
Site Trip Distribution
(2045 - Main Site)

Scale: Not to Scale | Figure 12c


Independence Pointe Parkway
Matthews-Mint Hill Road
SB Quadrant Road
Matchline C
Matchline B
NB Quadrant Road
Northeast Parkway
Moore Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway
Public Road A
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Greylock Ridge Road Ext
SITE
SITE
SITE
SITE
SITE (Parcel T)
Matchline A
Tank Town Road
INSET
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X% Entering Trip Distribution
(Y%) Exiting Trip Distribution
XX% Regional Trip Distribution
RKA
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Commercial
Site Trip Distribution
(2045 - Main Site)
[Greylock Extension]
Scale: Not to Scale
Figure 12d

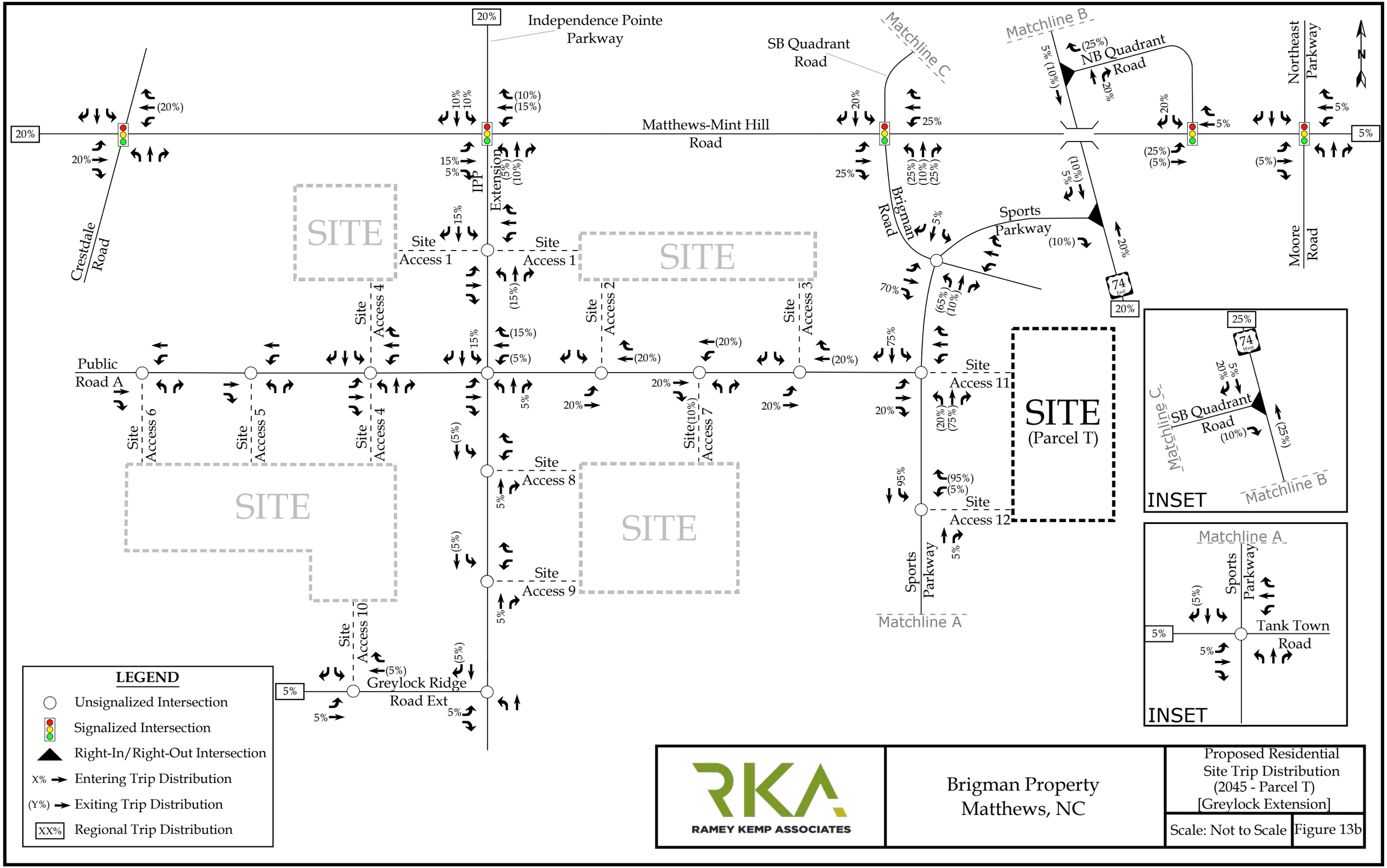


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Distribution
(2045 - Parcel T)

Scale: Not to Scale | Figure 13a

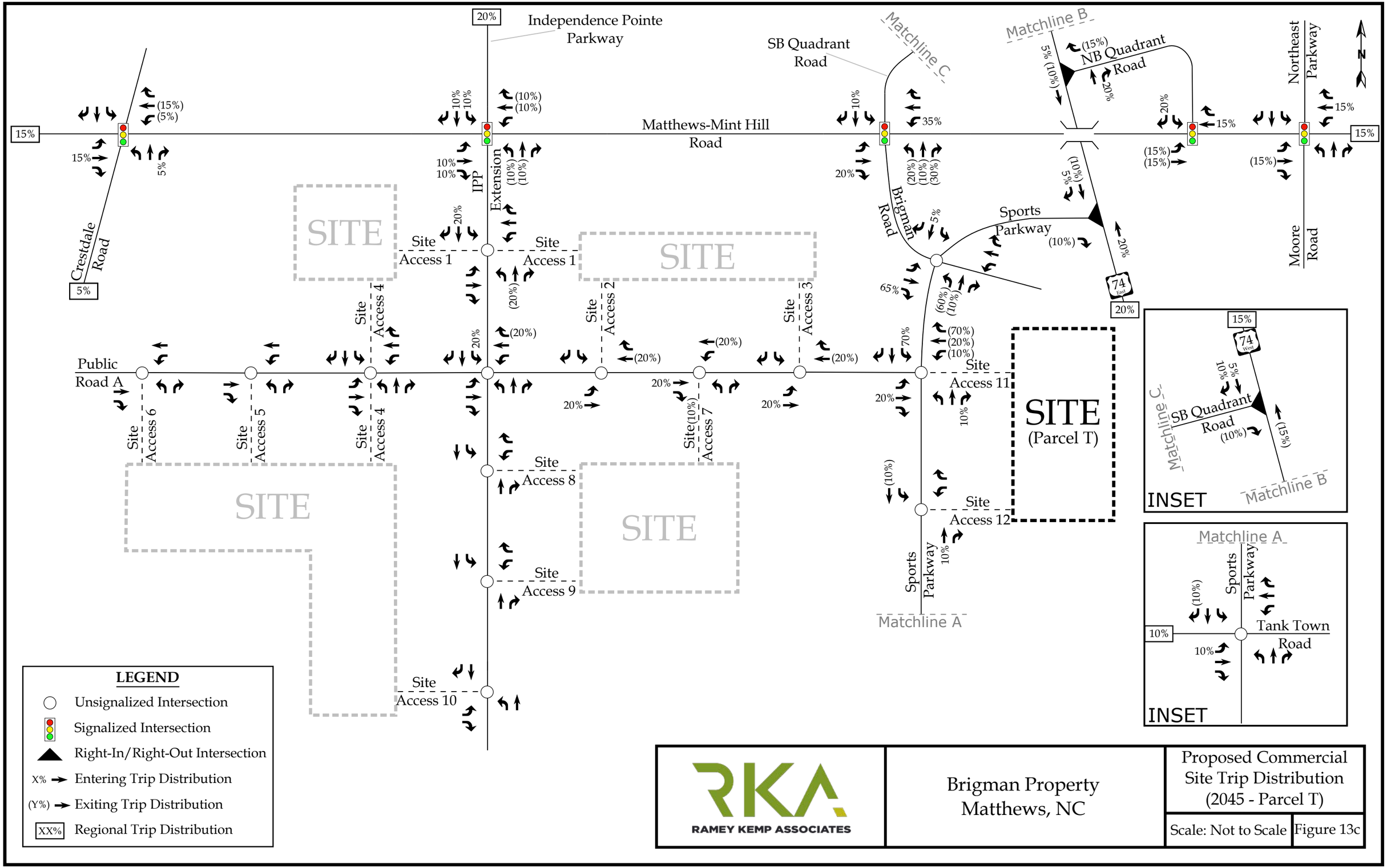


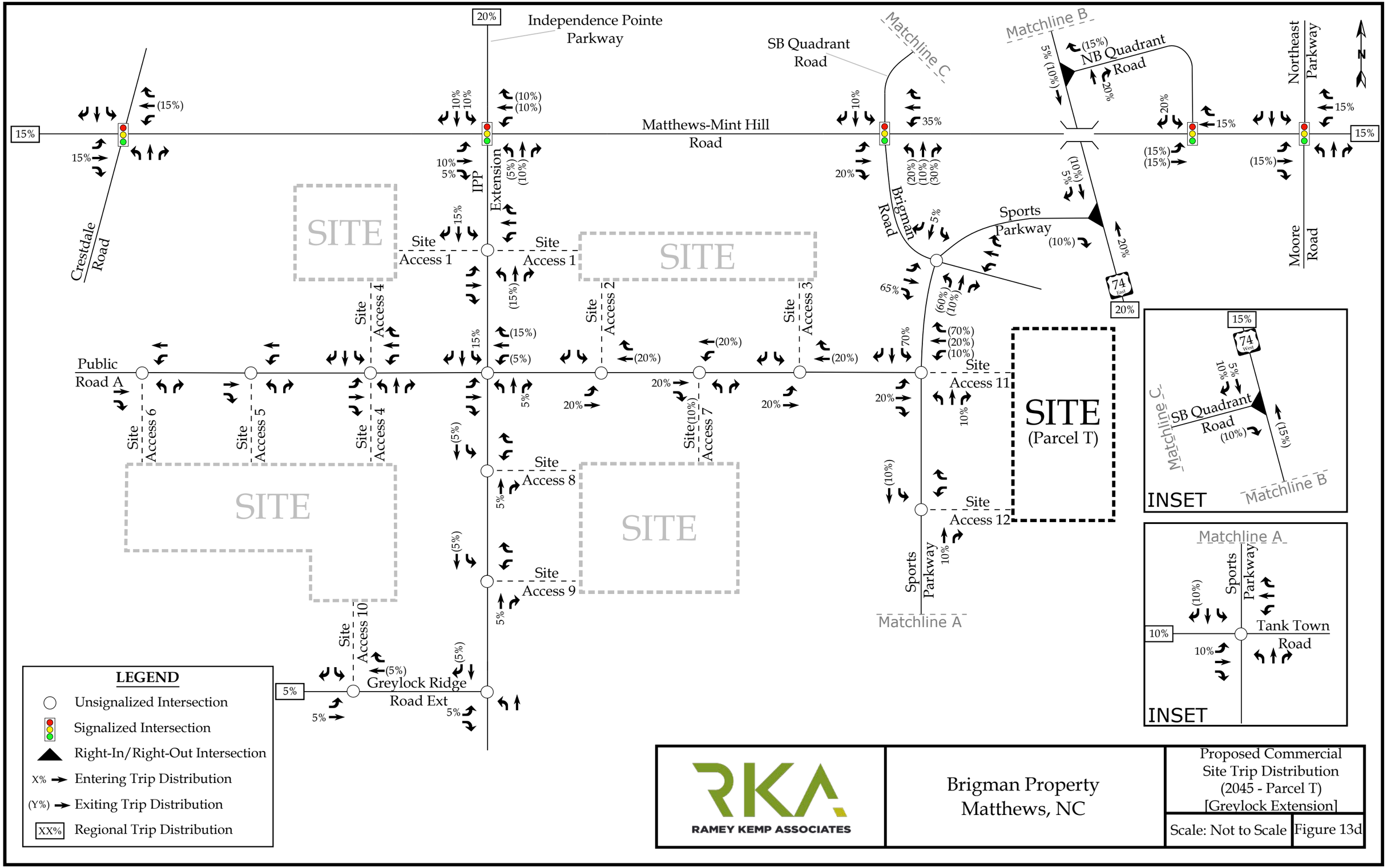
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Distribution
(2045 - Parcel T)
[Greylock Extension]

Scale: Not to Scale | Figure 13b


Independence Pointe Parkway
SB Quadrant Road
Matchline C
Matchline B
NB Quadrant Road
Northeast Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway
Moore Road
SITE
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Public Road A
SITE (Parcel T)
Matchline A
Tank Town Road
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X% Entering Trip Distribution
(Y%) Exiting Trip Distribution
XX% Regional Trip Distribution
RKA
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Commercial
Site Trip Distribution
(2045 - Parcel T)
Scale: Not to Scale
Figure 13c

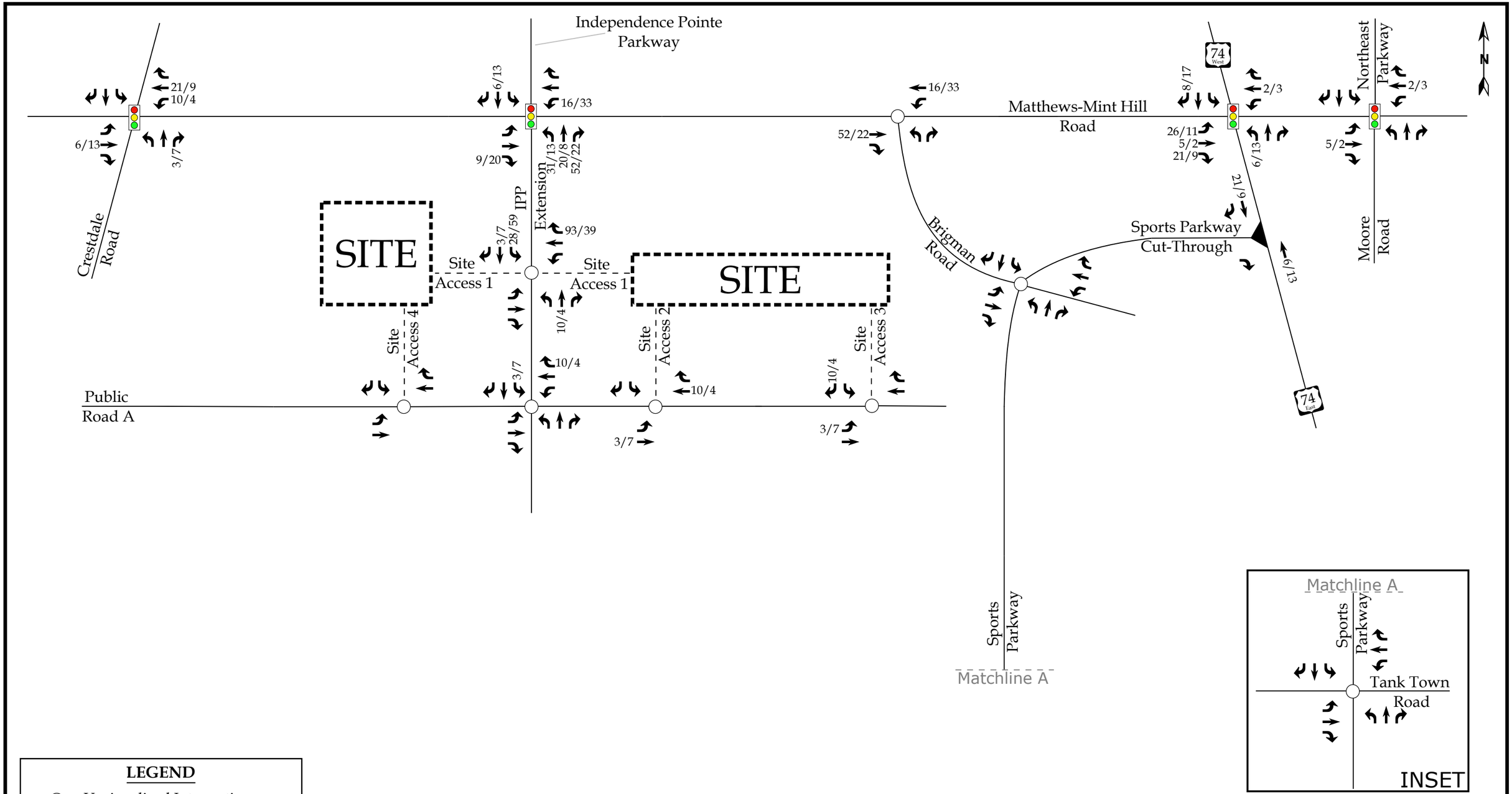


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial
Site Trip Distribution
(2045 - Parcel T)
[Greylock Extension]

Scale: Not to Scale | Figure 13d



LEGEND

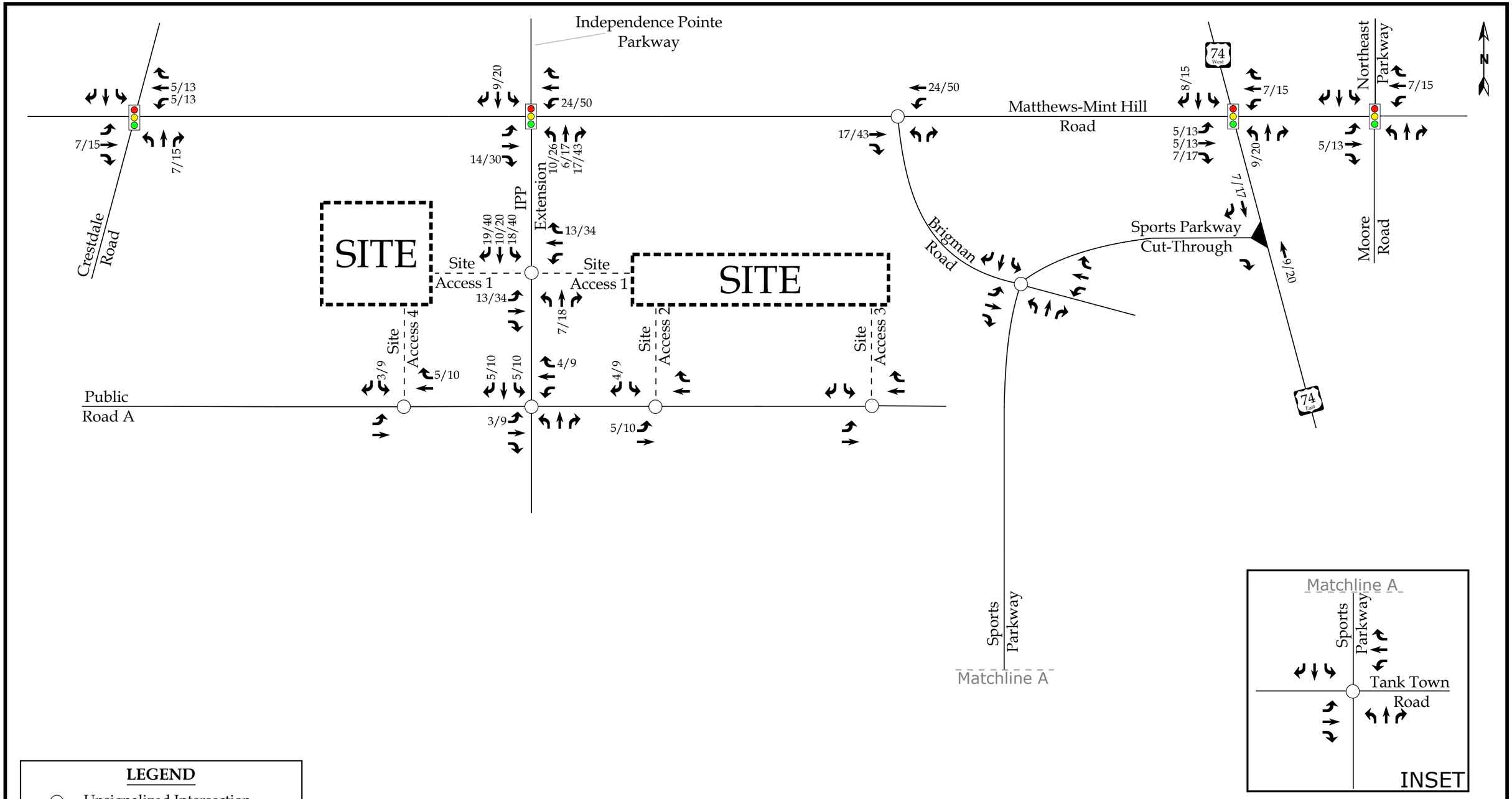
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Assignment
(Phase 1)

Scale: Not to Scale | Figure 14a



LEGEND

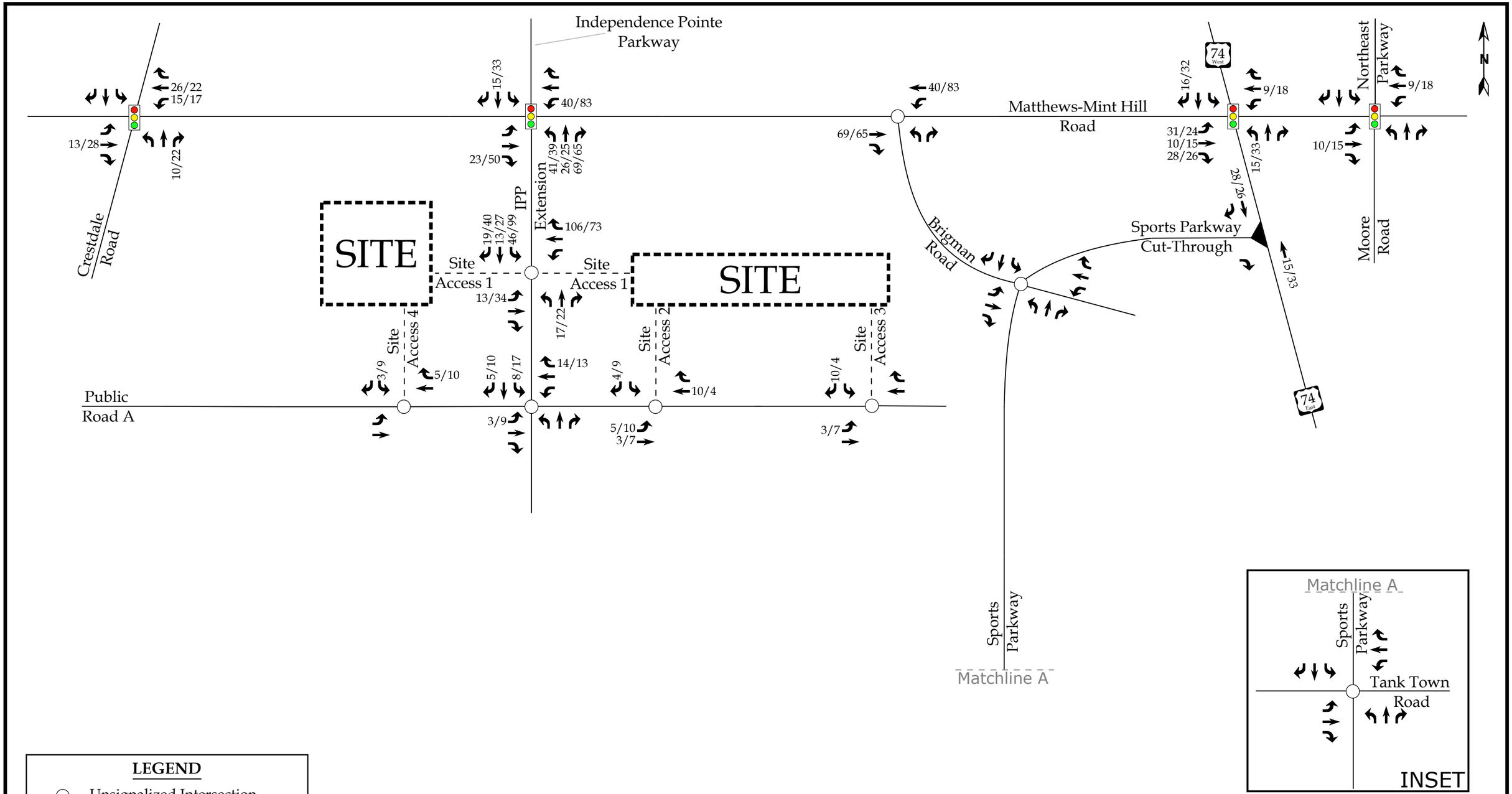
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial Site Trip Assignment (Phase 1)

Scale: Not to Scale | Figure 14b



LEGEND

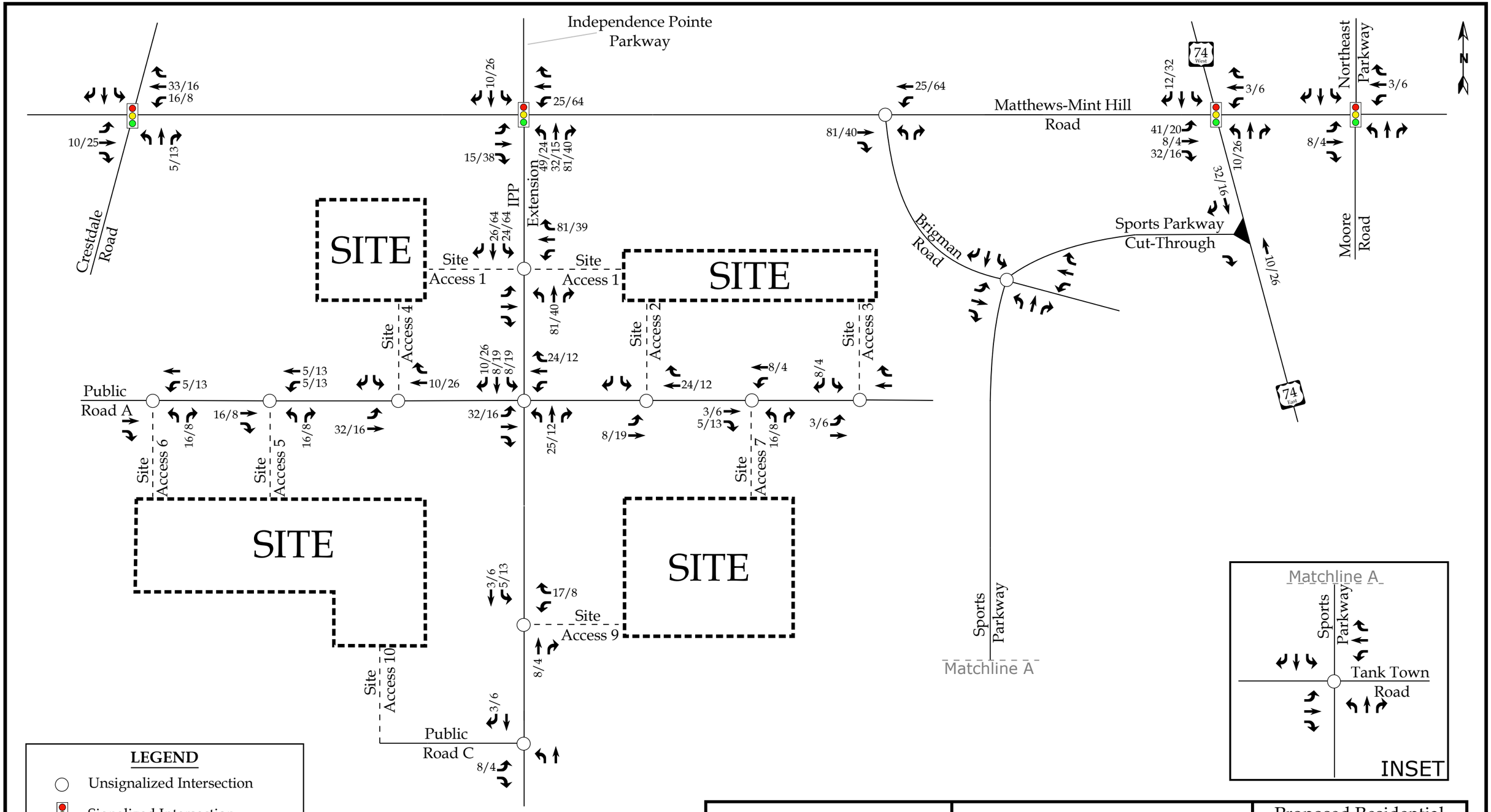
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Total
Site Trip Assignment
(Phase 1)

Scale: Not to Scale | Figure 15



LEGEND

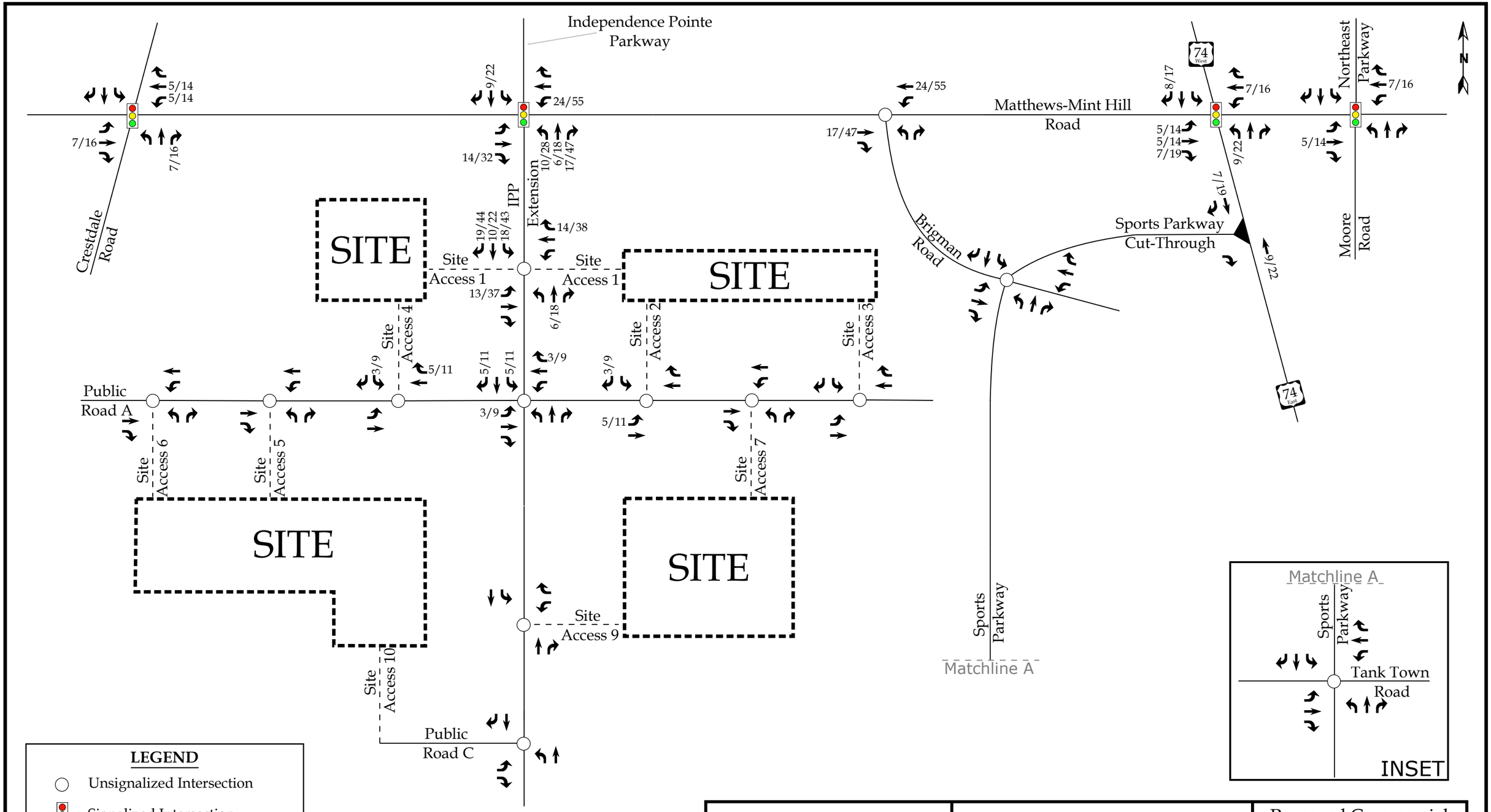
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential Site Trip Assignment (Phase 2)

Scale: Not to Scale | Figure 16a

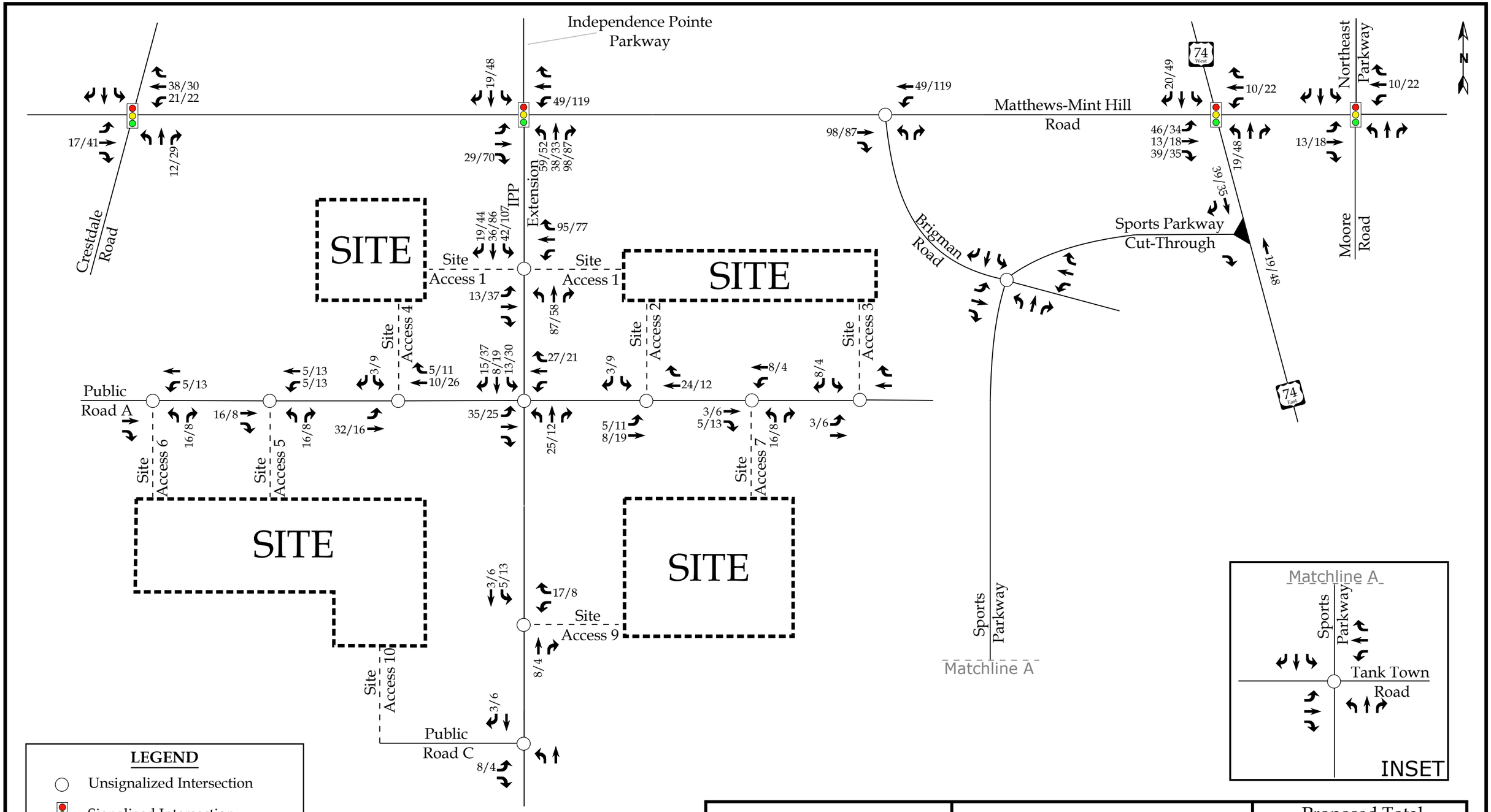


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial Site Trip Assignment (Phase 2)

Scale: Not to Scale | Figure 16b



LEGEND

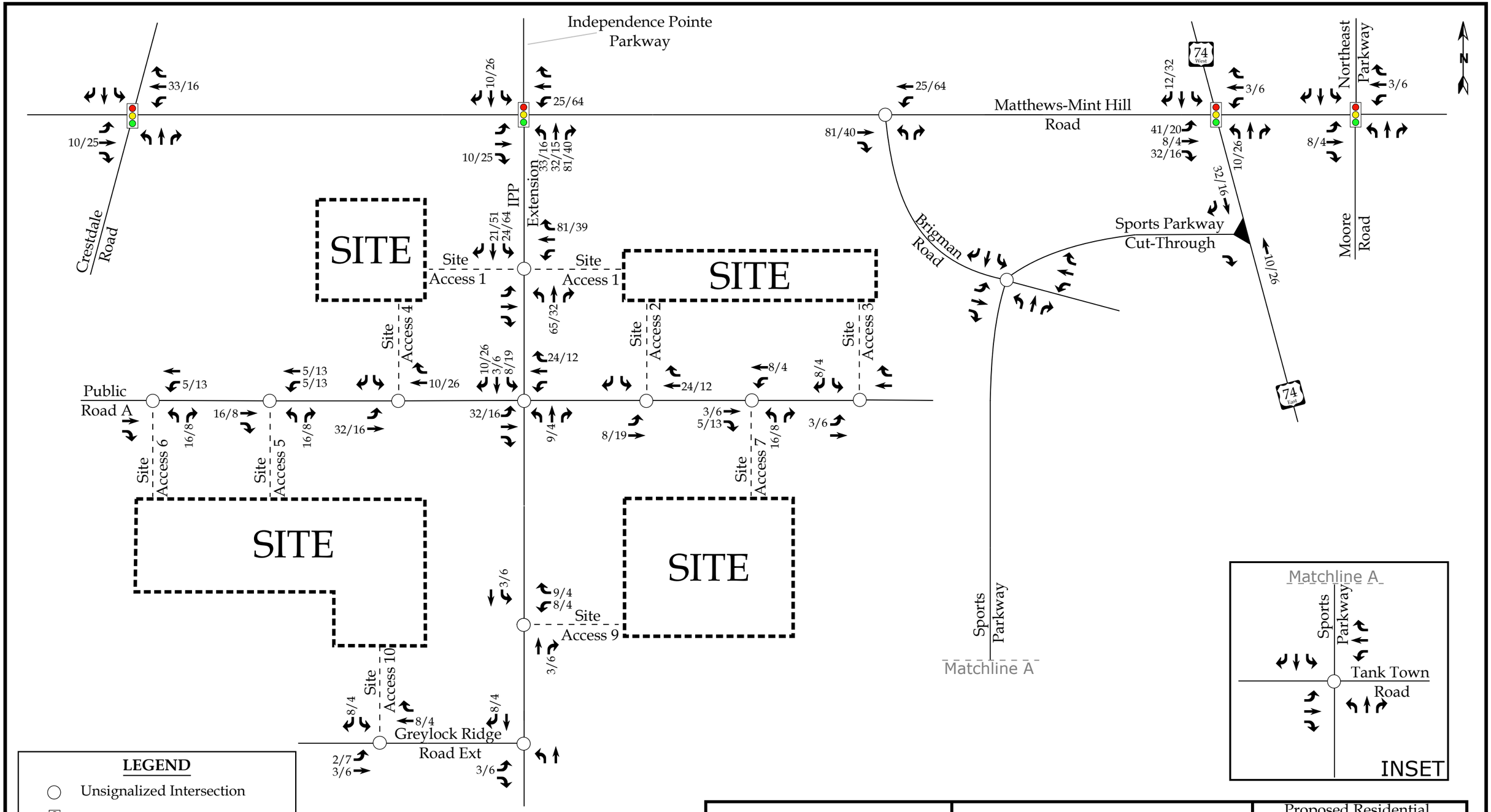
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Total Site Trip Assignment (Phase 2)

Scale: Not to Scale | Figure 17

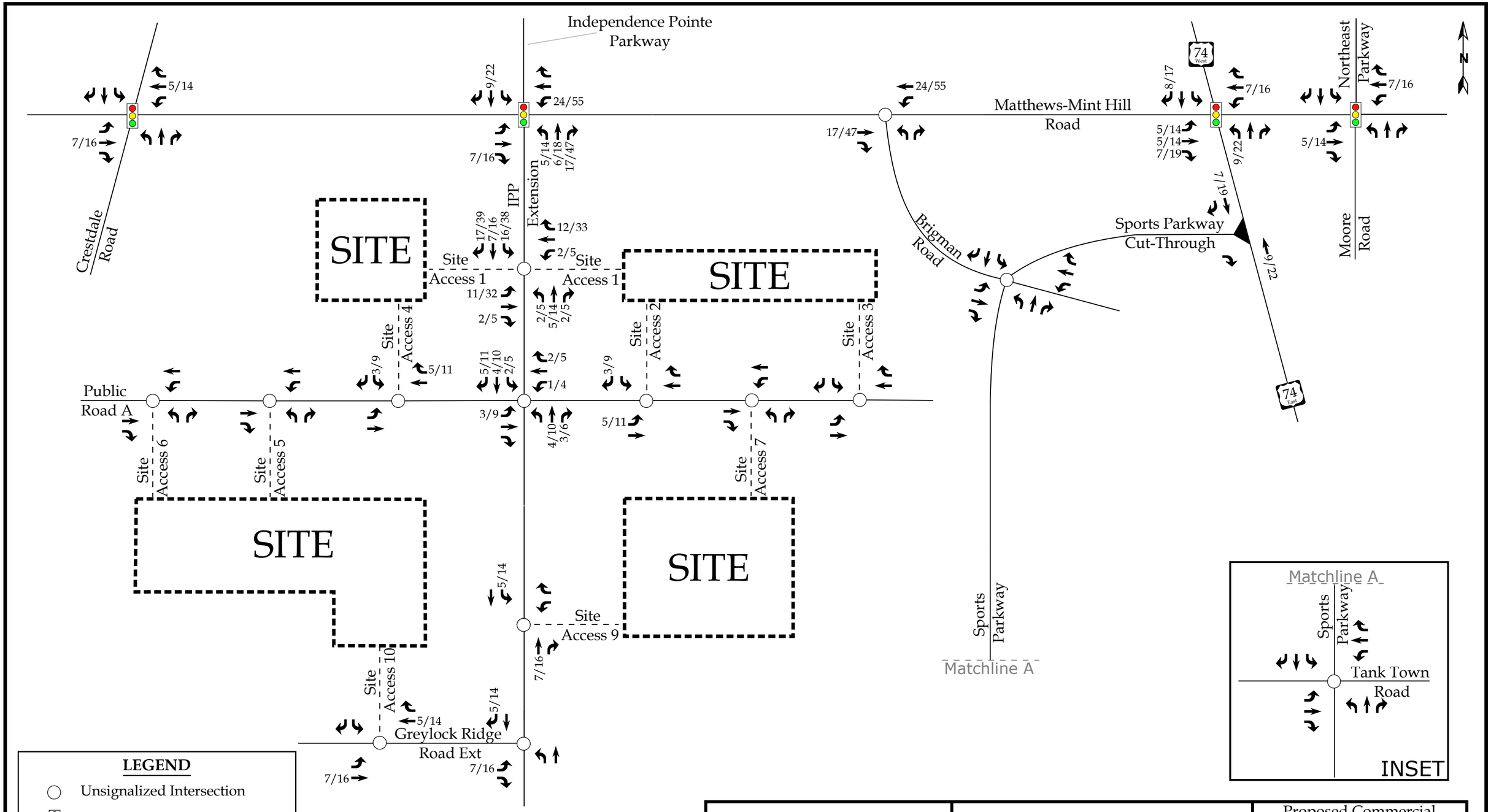


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Assignment
(Phase 2)
[Greylock Ext]

Scale: Not to Scale | Figure 18a

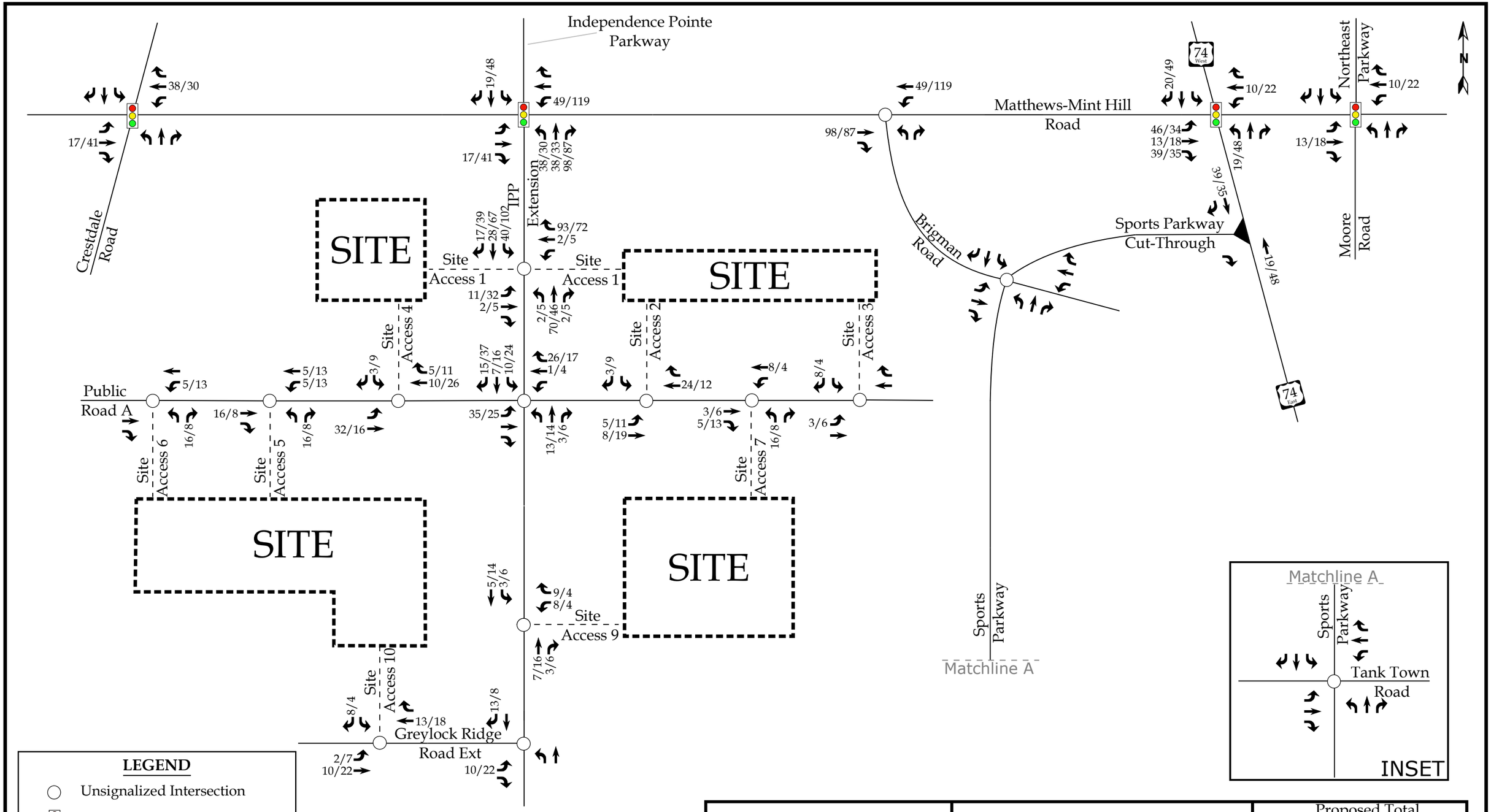


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial
Site Trip Assignment
(Phase 2)
[Greylock Ext]

Scale: Not to Scale | Figure 18b



RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Total
Site Trip Assignment
(Phase 2)
[Greylock Ext]

Scale: Not to Scale | Figure 19

Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway Cut-Through
Northeast Parkway
Moore Road
Public Road A
Public Road C
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
SITE
SITE
SITE
SITE
(Parcel T)
Sports Parkway
Matchline A
Matchline A
Tank Town Road
INSET

LEGEND

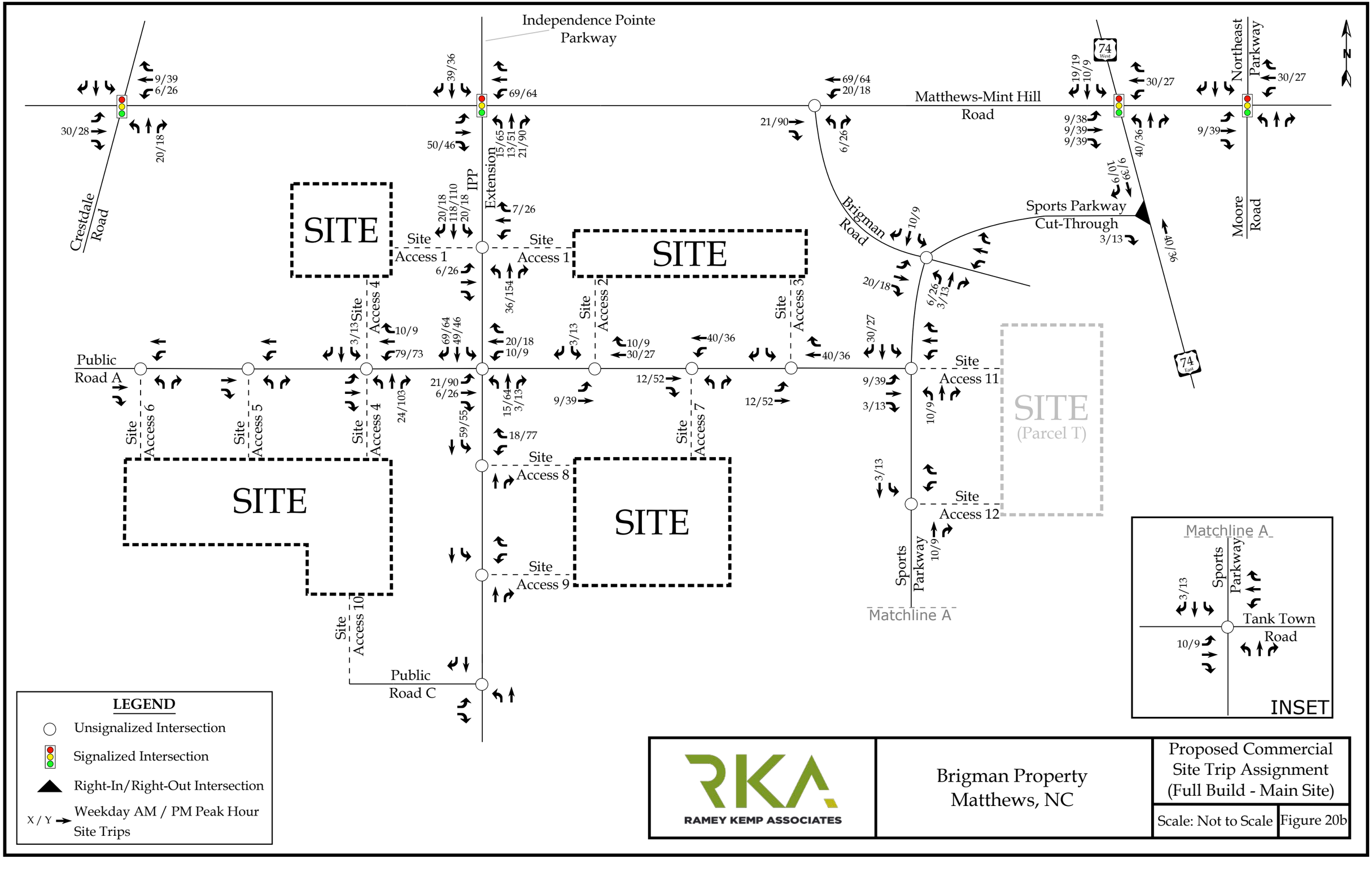
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

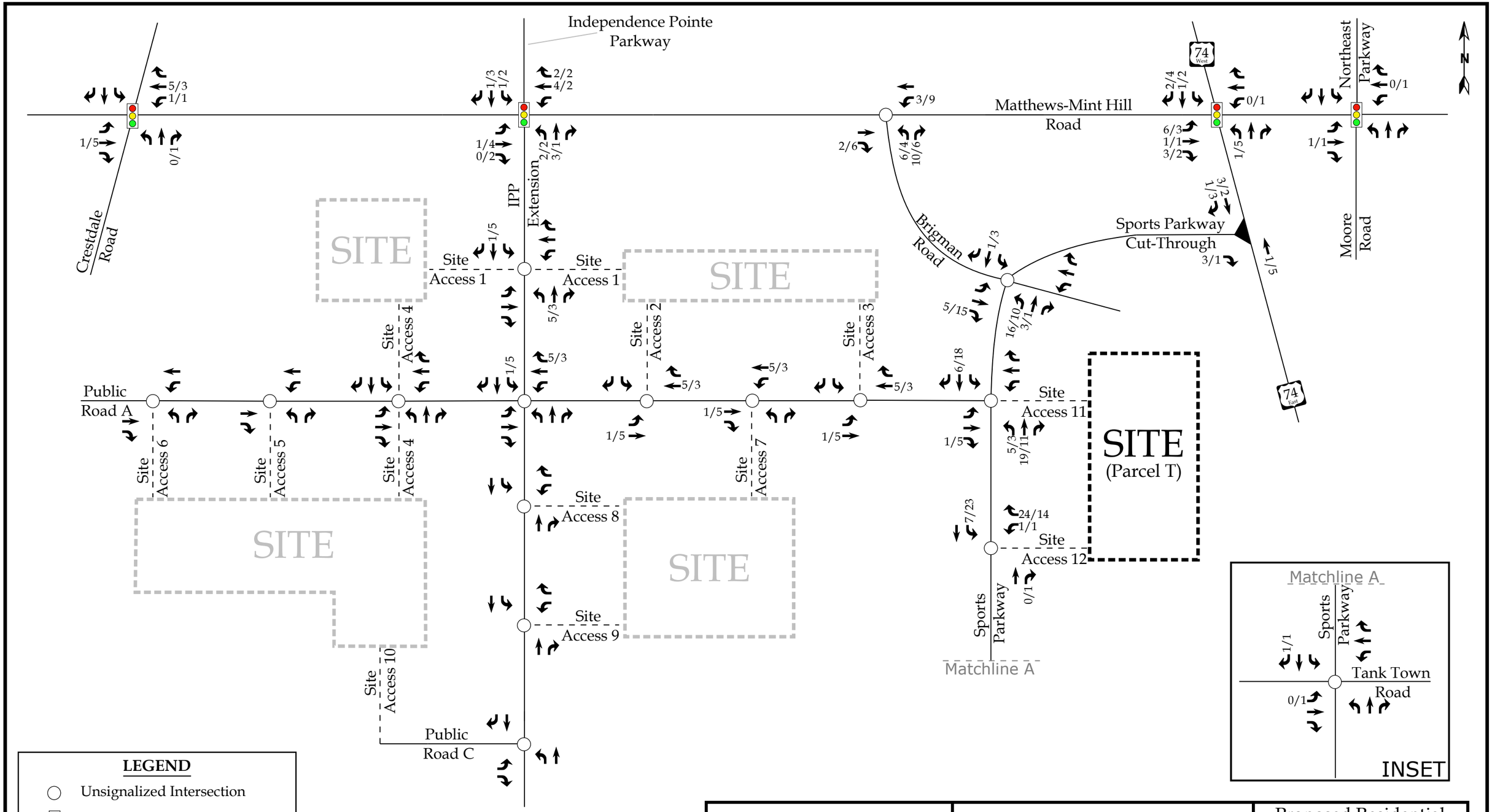
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Assignemnt
(Full Build - Main Site)

Scale: Not to Scale | Figure 20a


Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
Brigman Road
Sports Parkway Cut-Through
Northeast Parkway
Moore Road
IPP Extension
Public Road A
Public Road C
Sports Parkway
Tank Town Road
SITE
SITE
SITE
SITE
(Parcel T)
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Matchline A
Matchline A
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Site Trips
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Commercial
Site Trip Assignment
(Full Build - Main Site)
Scale: Not to Scale
Figure 20b



LEGEND

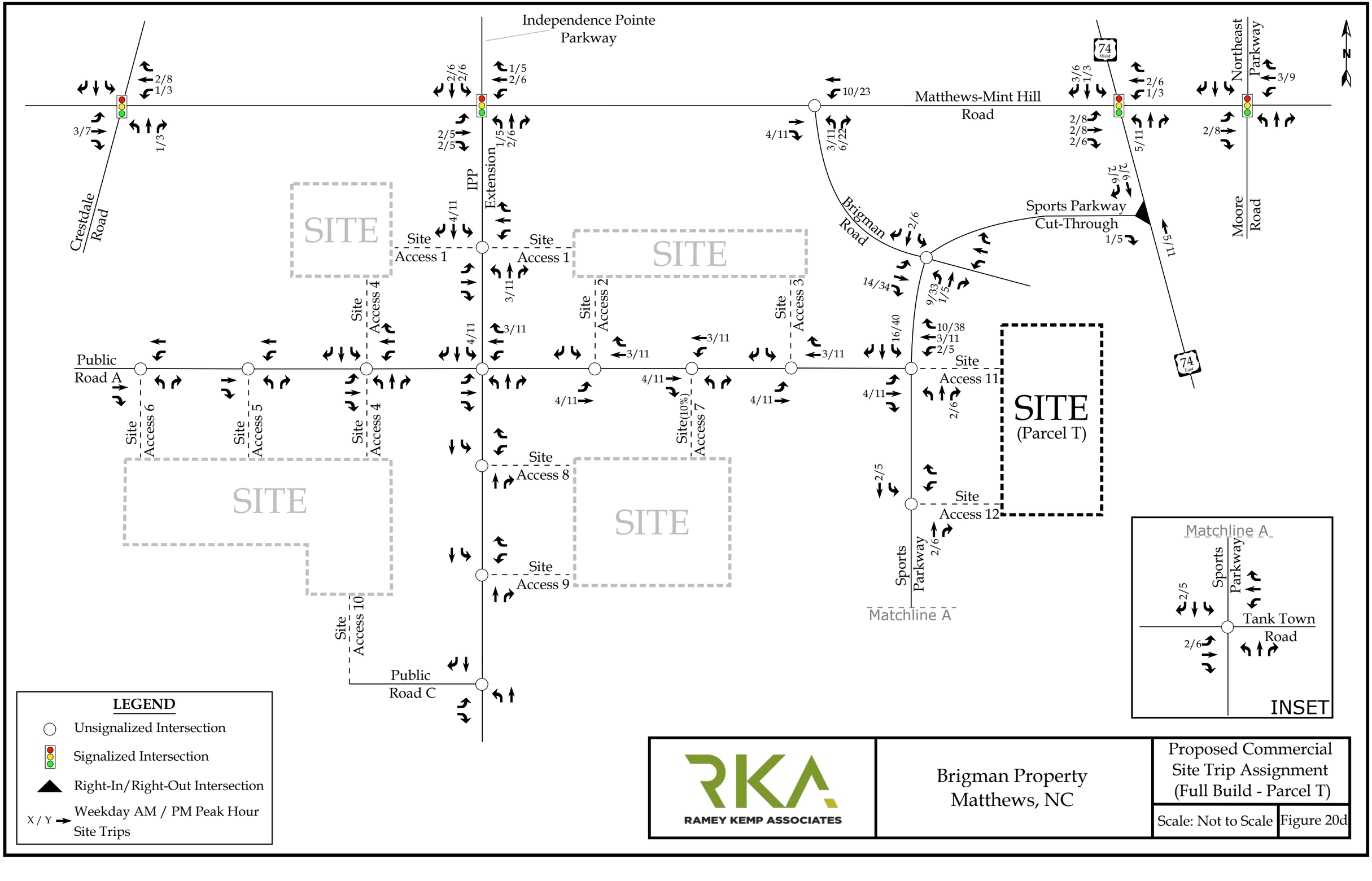
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Assignment
(Full Build - Parcel T)

Scale: Not to Scale | Figure 20c

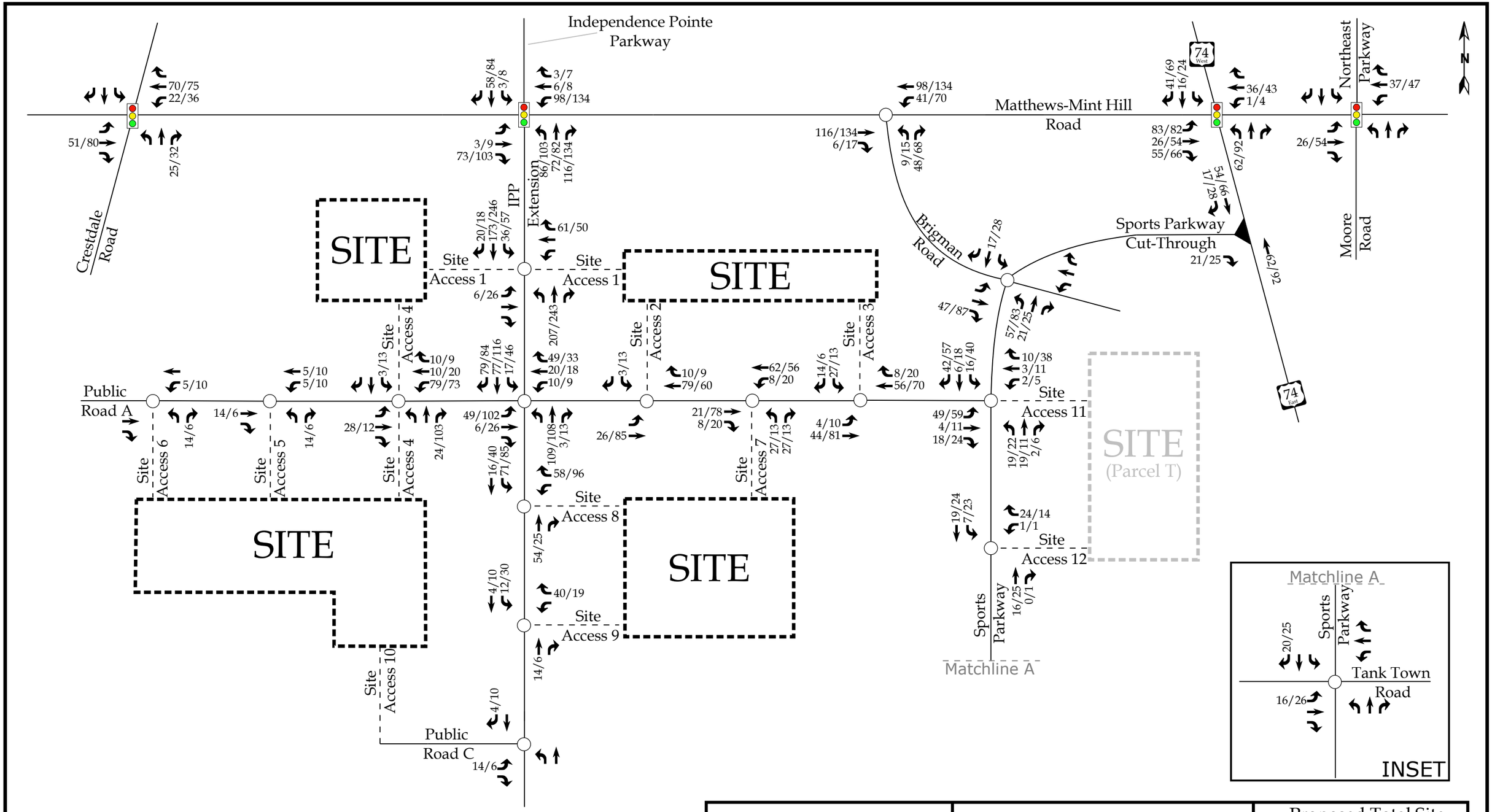


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial
Site Trip Assignment
(Full Build - Parcel T)

Scale: Not to Scale | Figure 20d

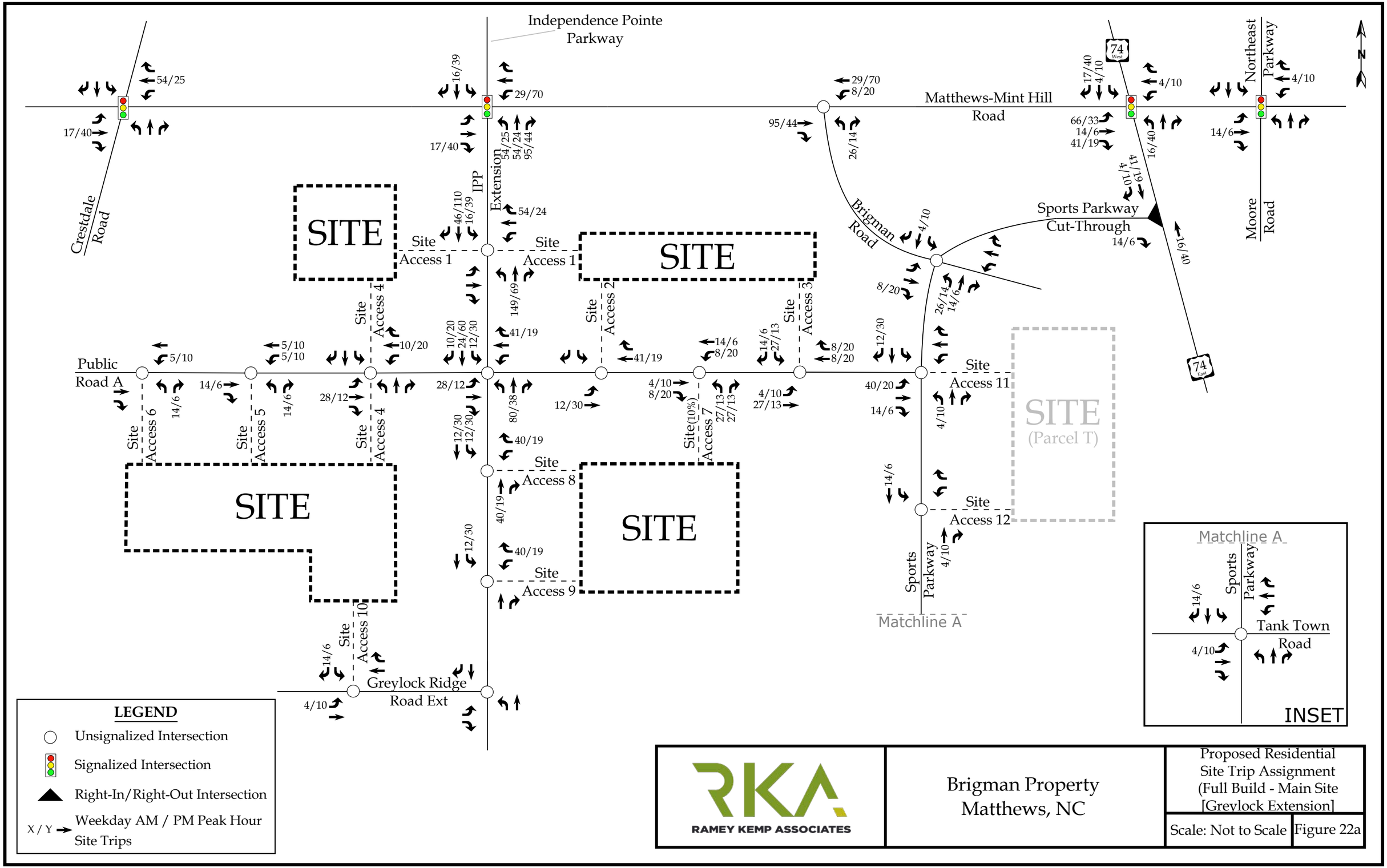


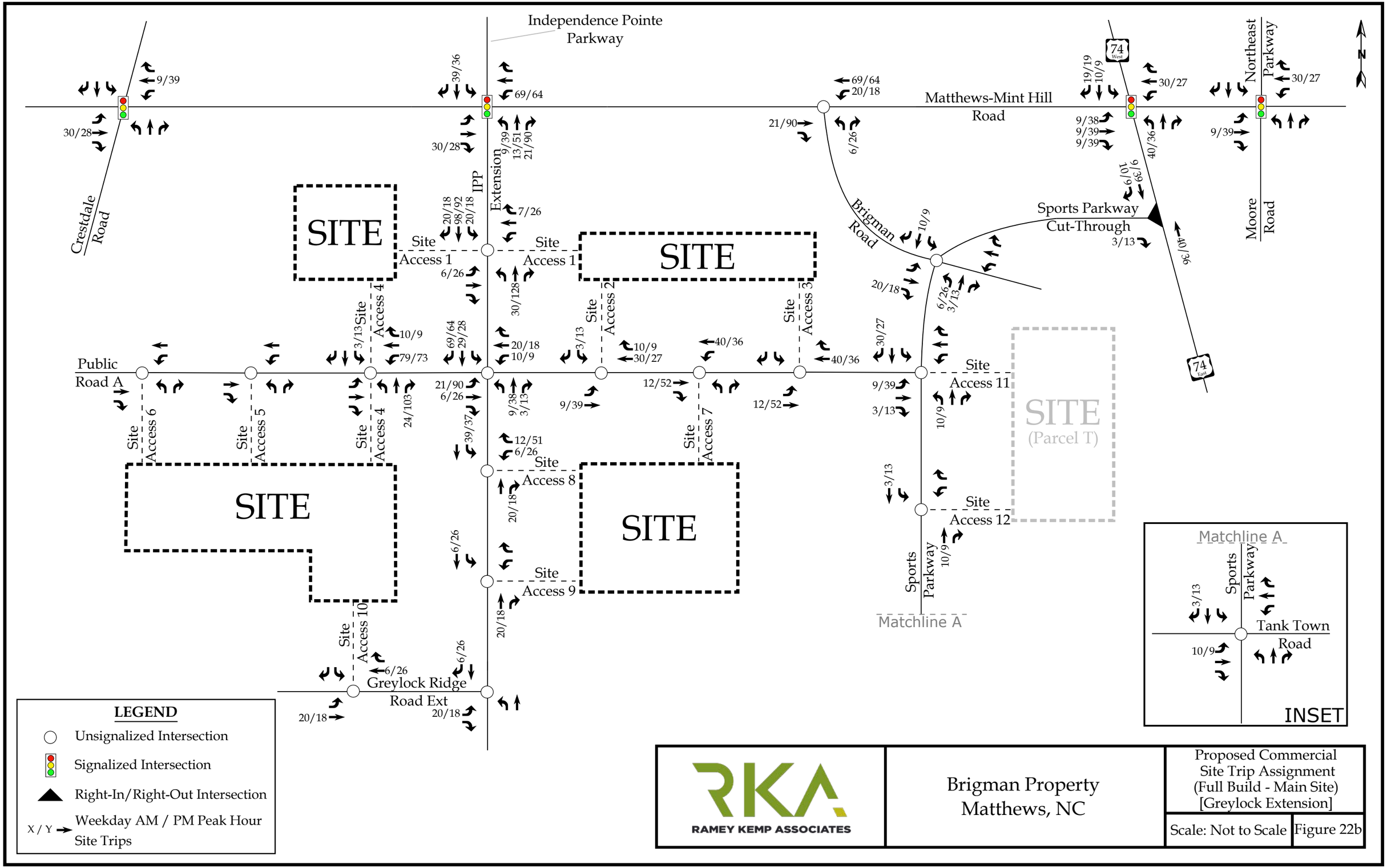
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Total Site Trip Assignment
(Full Build - Main Site)

Scale: Not to Scale | Figure 21


Independence Pointe Parkway
Matthews-Mint Hill Road
Northeast Parkway
Moore Road
Crestdale Road
Brigman Road
Sports Parkway Cut-Through
IPP Extension
Public Road A
Greylock Ridge Road Ext
Sports Parkway
Tank Town Road
SITE
SITE
SITE
SITE
(Parcel T)
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Matchline A
Matchline A
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Site Trips
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Residential
Site Trip Assignment
(Full Build - Main Site
[Greylock Extension]
Scale: Not to Scale
Figure 22a

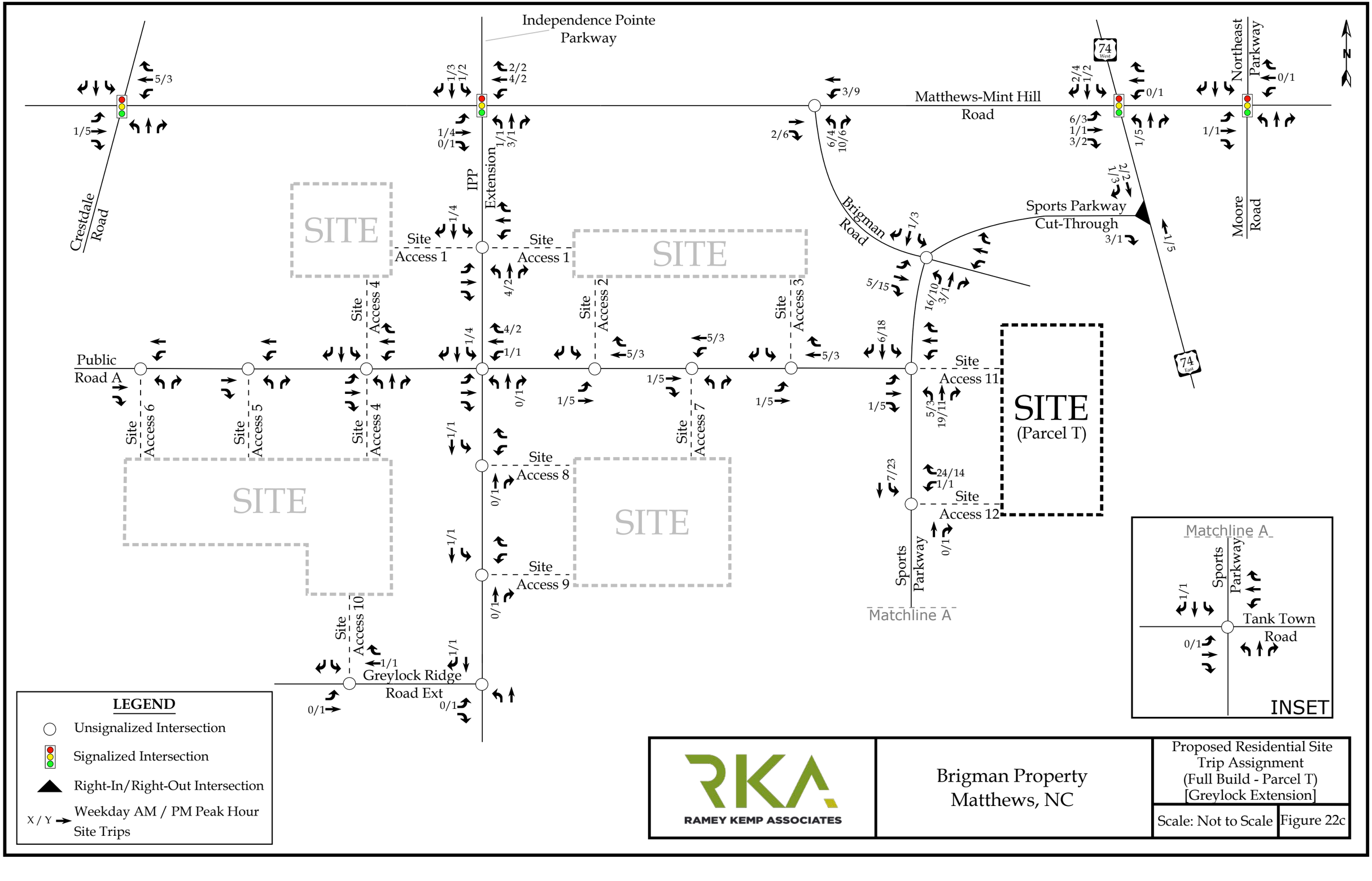


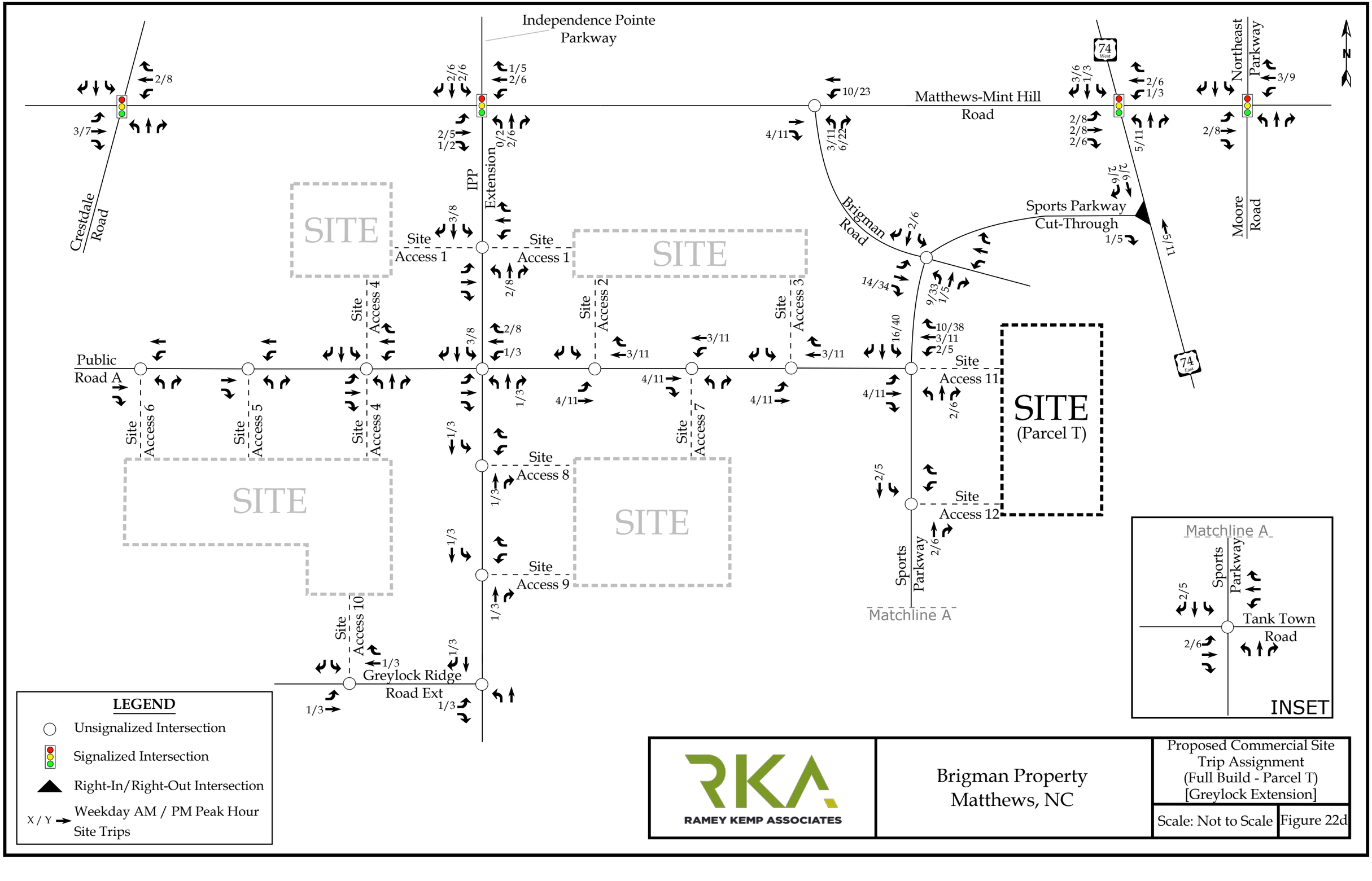
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial
Site Trip Assignment
(Full Build - Main Site)
[Greylock Extension]

Scale: Not to Scale | Figure 22b


Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway Cut-Through
Northeast Parkway
Moore Road
74 West
74 East
SITE
SITE
SITE
SITE
(Parcel T)
Site Access 1
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Public Road A
Greylock Ridge Road Ext
Sports Parkway
Matchline A
Matchline A
Tank Town Road
INSET
N
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Site Trips
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Residential Site Trip Assignment
(Full Build - Parcel T)
[Greylock Extension]
Scale: Not to Scale
Figure 22c

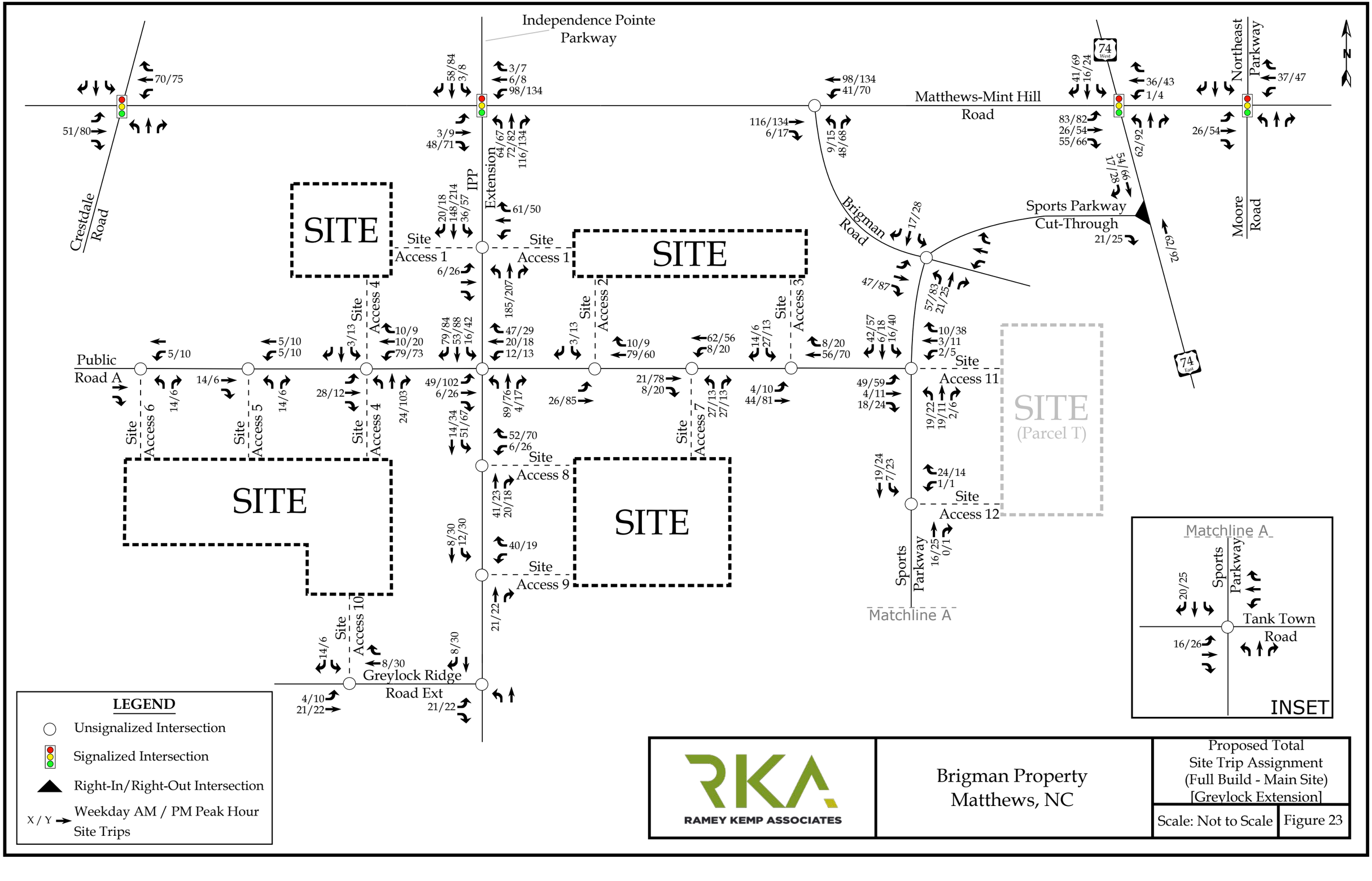


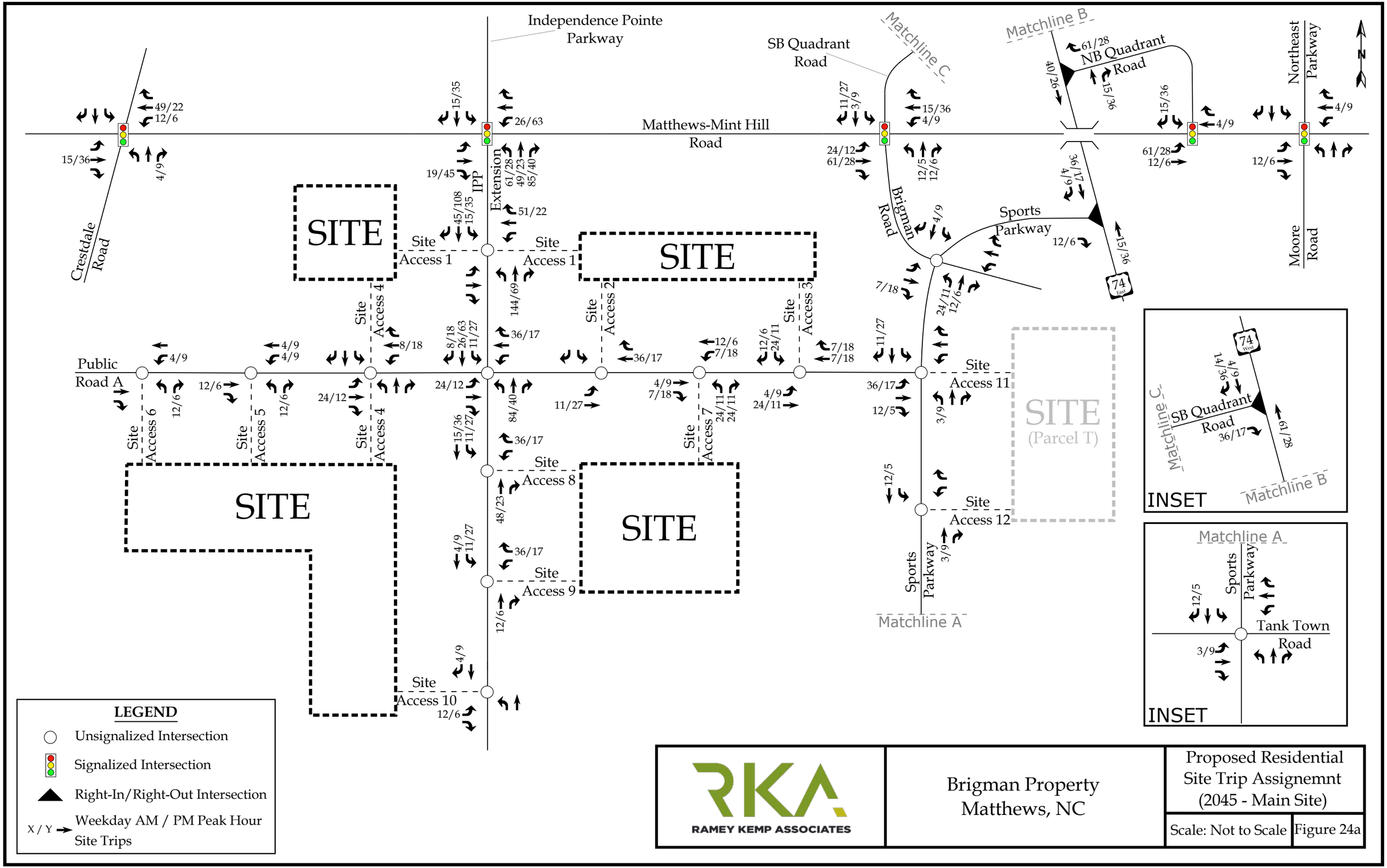
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial Site Trip Assignment
(Full Build - Parcel T)
[Greylock Extension]

Scale: Not to Scale | Figure 22d


Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
Brigman Road
Sports Parkway Cut-Through
Northeast Parkway
Moore Road
IPP Extension
Public Road A
Greylock Ridge Road Ext
Sports Parkway
Tank Town Road
SITE
SITE
SITE
SITE
(Parcel T)
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Matchline A
Matchline A
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Site Trips
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Total
Site Trip Assignment
(Full Build - Main Site)
[Greylock Extension]
Scale: Not to Scale
Figure 23



LEGEND

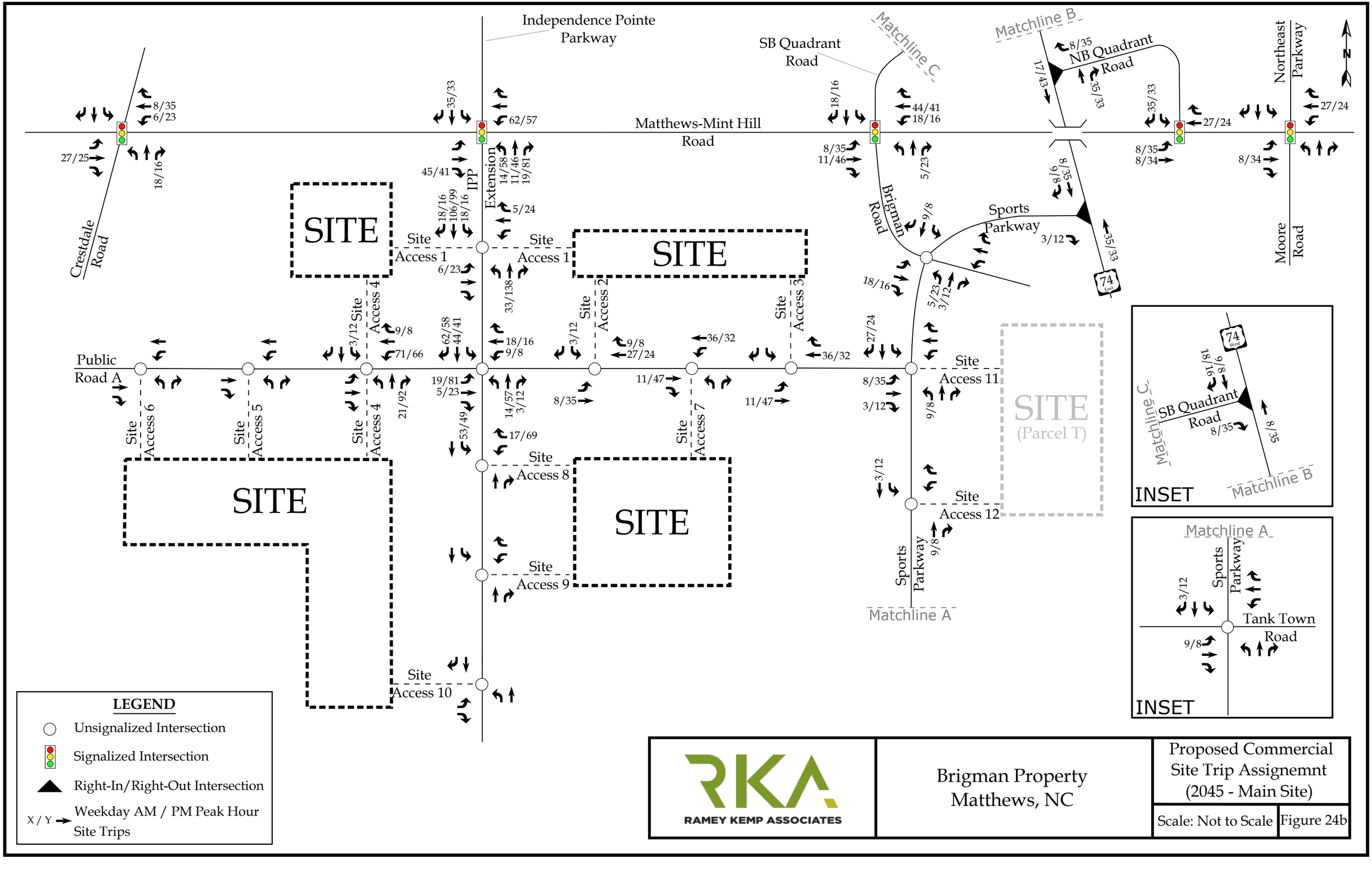
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Assignemnt
(2045 - Main Site)

Scale: Not to Scale | Figure 24a



LEGEND

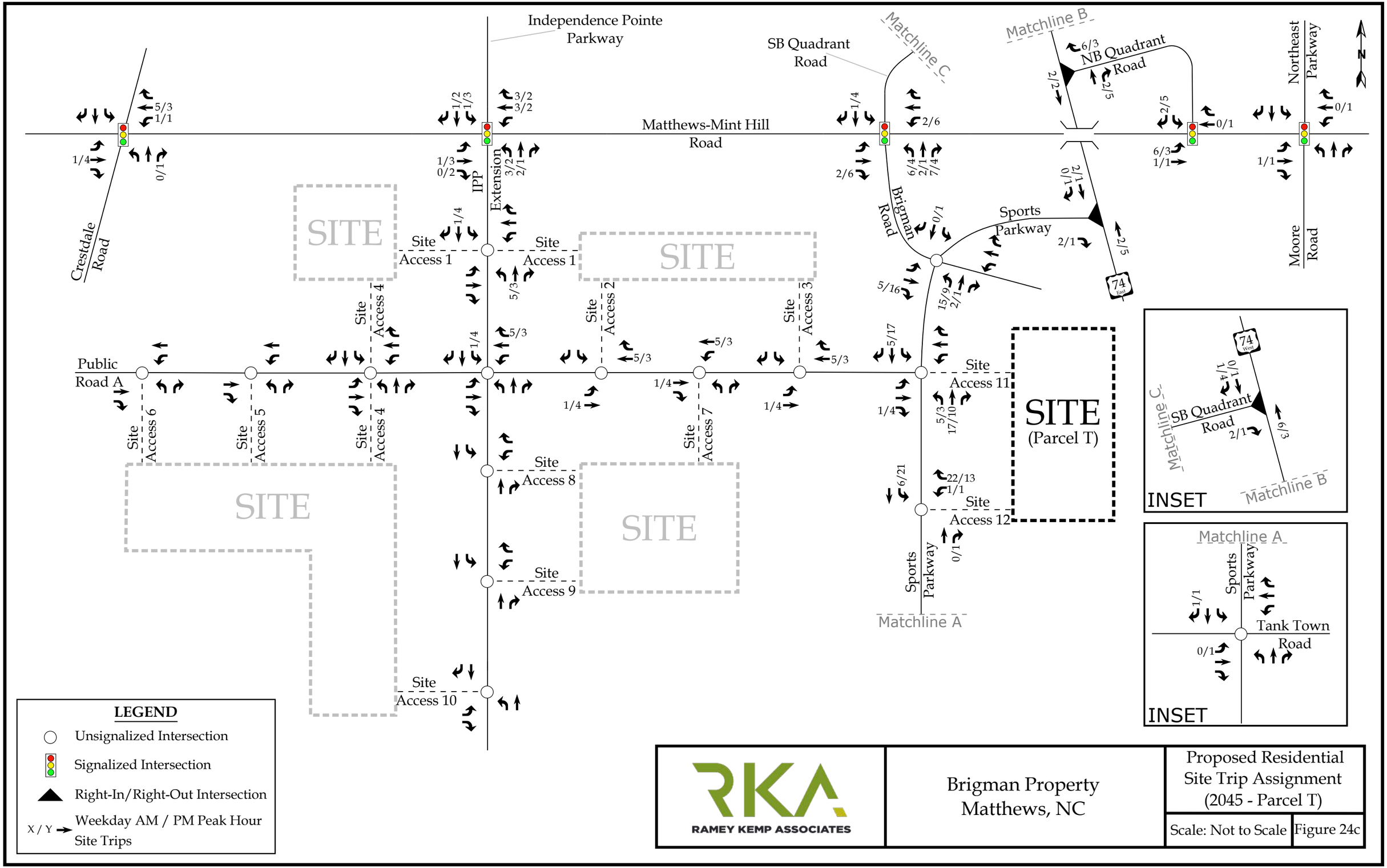
- ○ Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Commercial
Site Trip Assignemnt
(2045 - Main Site)

Scale: Not to Scale | Figure 24b

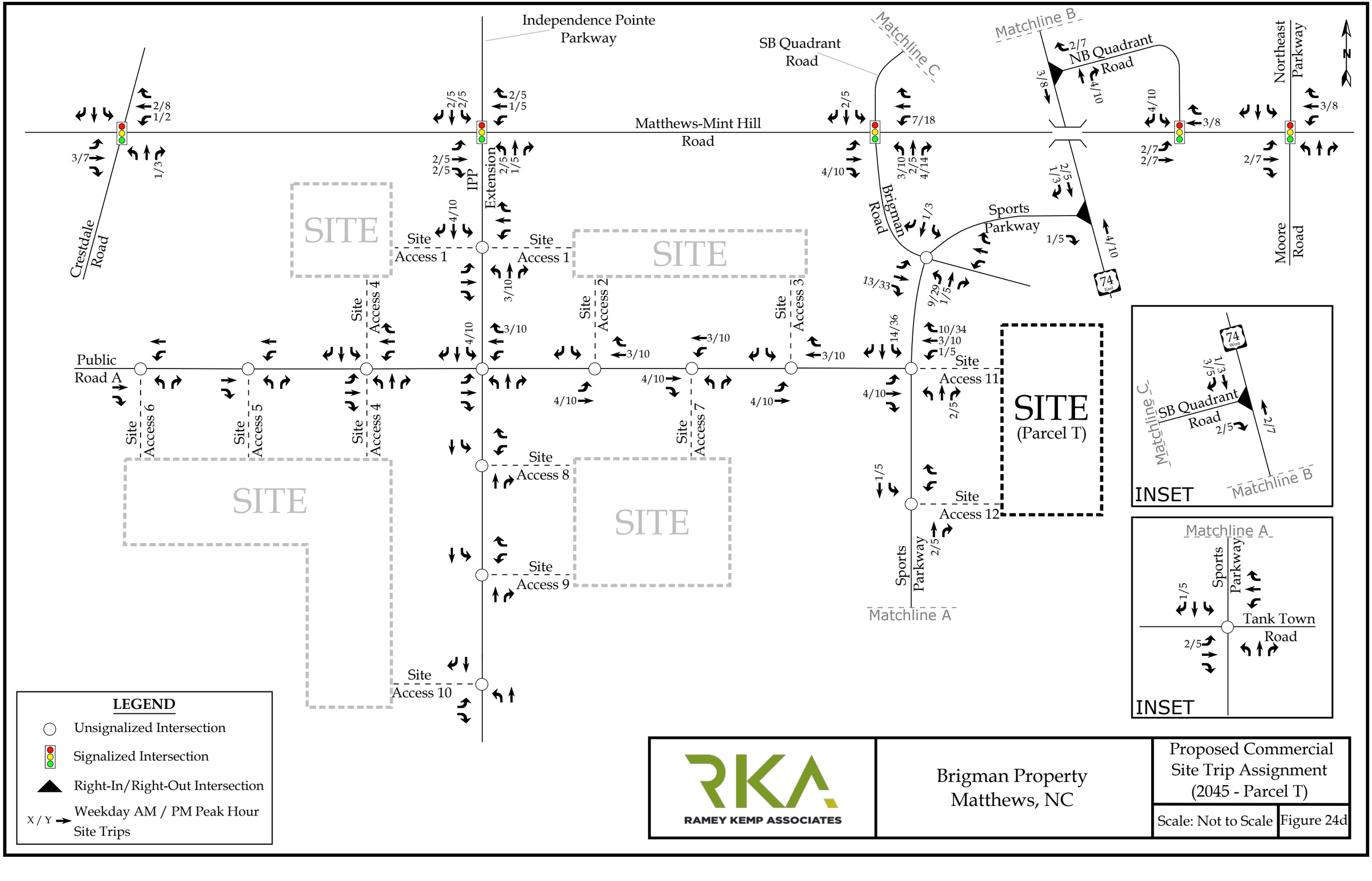


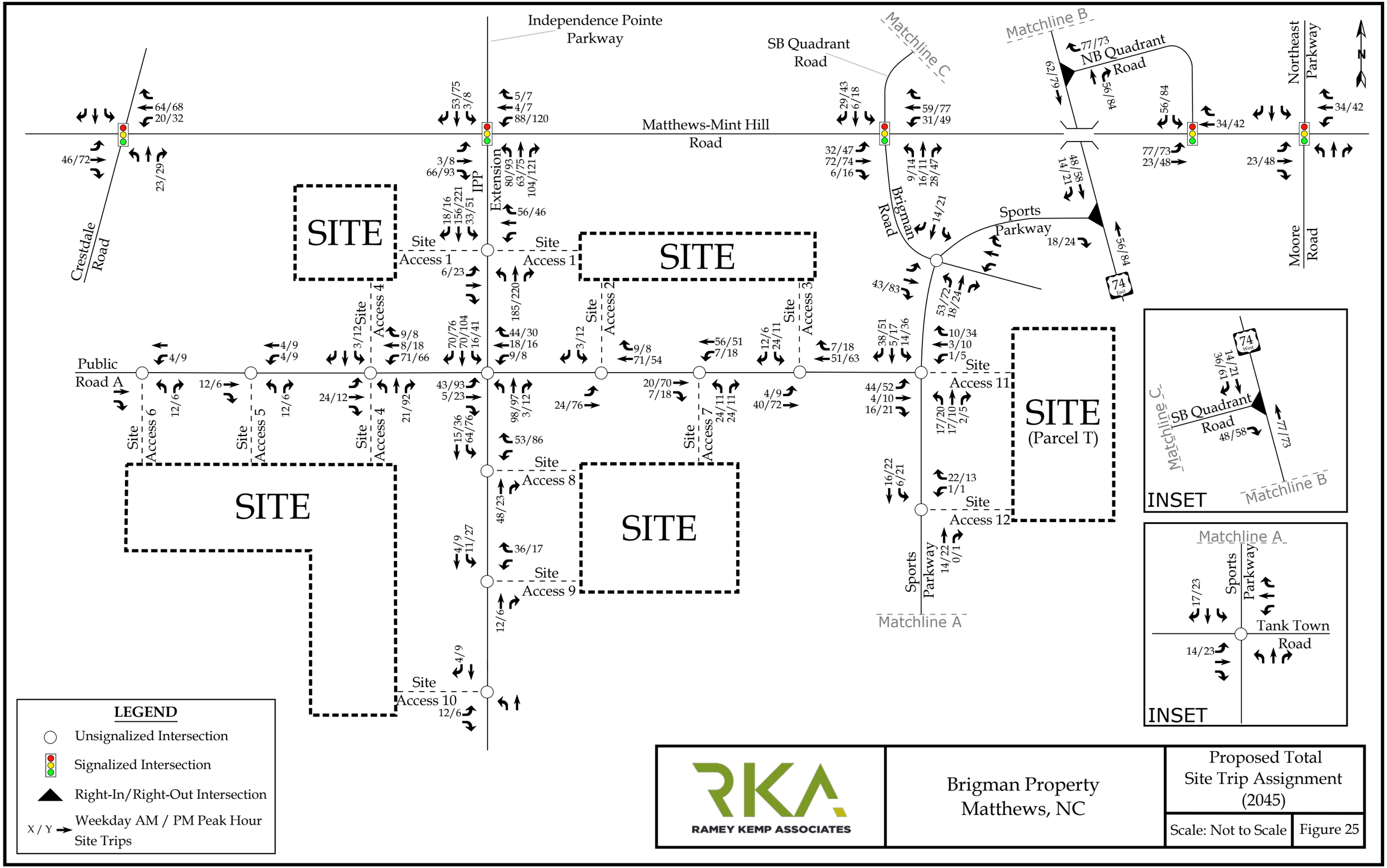
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Residential
Site Trip Assignment
(2045 - Parcel T)

Scale: Not to Scale | Figure 24c


Independence Pointe Parkway
SB Quadrant Road
Matchline C
Matchline B
NB Quadrant Road
Northeast Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway
Moore Road
SITE
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Public Road A
SITE (Parcel T)
Matchline A
Tank Town Road
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Site Trips
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Commercial
Site Trip Assignment
(2045 - Parcel T)
Scale: Not to Scale
Figure 24d

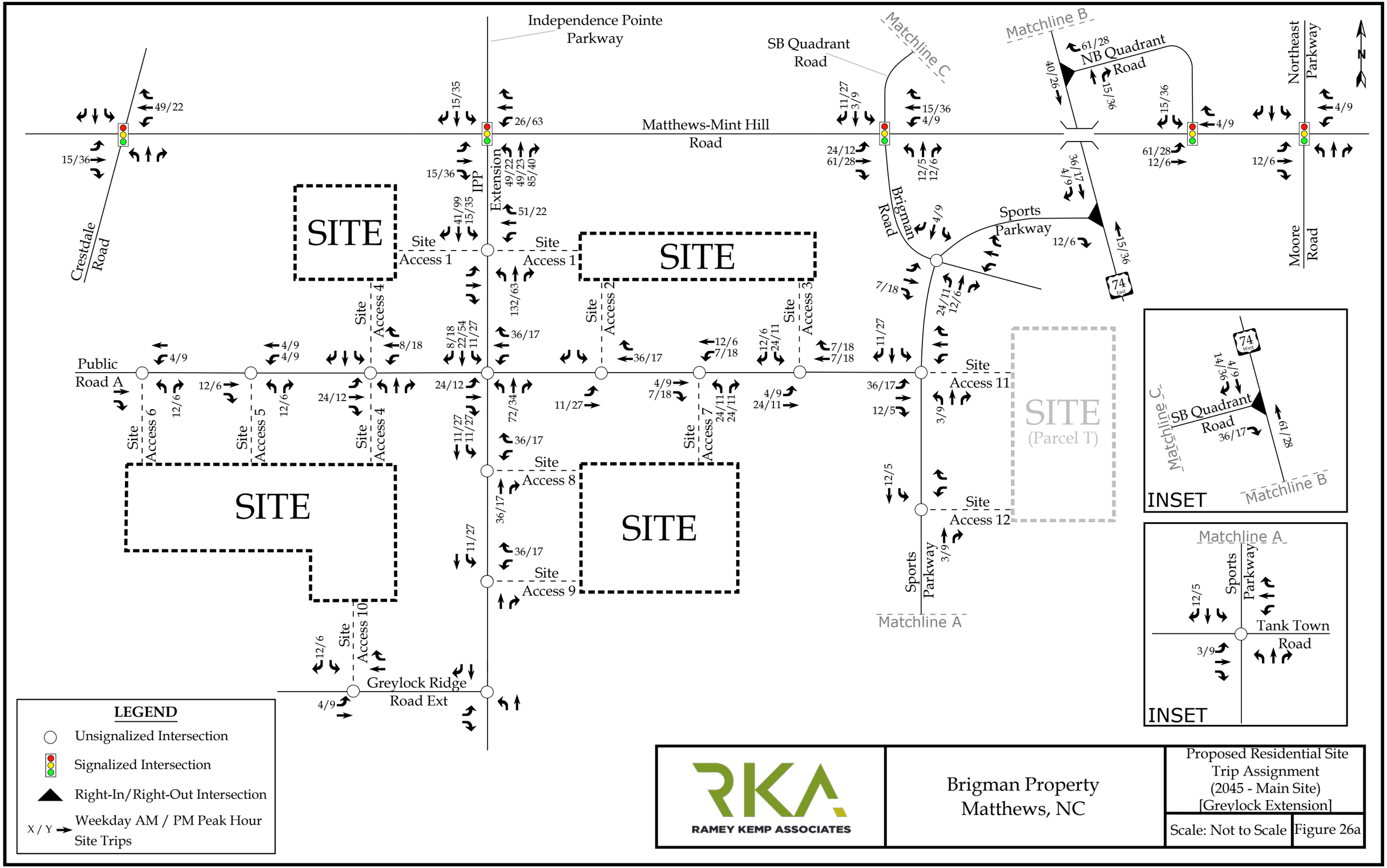


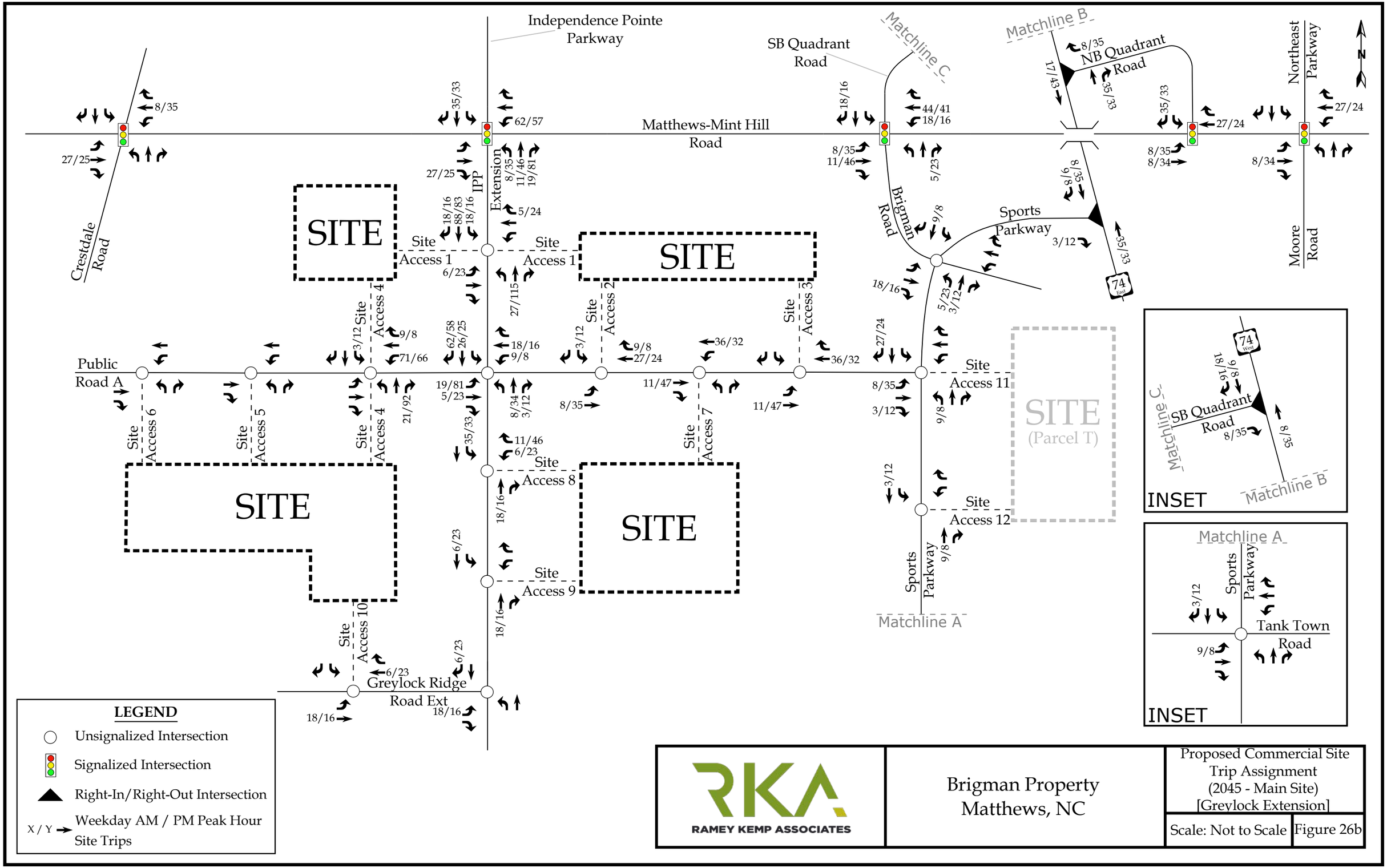
RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Total Site Trip Assignment (2045)

Scale: Not to Scale | Figure 25


Independence Pointe Parkway
SB Quadrant Road
Matchline C
Matchline B
NB Quadrant Road
Northeast Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway
Moore Road
SITE
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Public Road A
Greylock Ridge Road Ext
SITE (Parcel T)
Matchline A
Tank Town Road
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Site Trips
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Residential Site Trip Assignment
(2045 - Main Site)
[Greylock Extension]
Scale: Not to Scale
Figure 26a

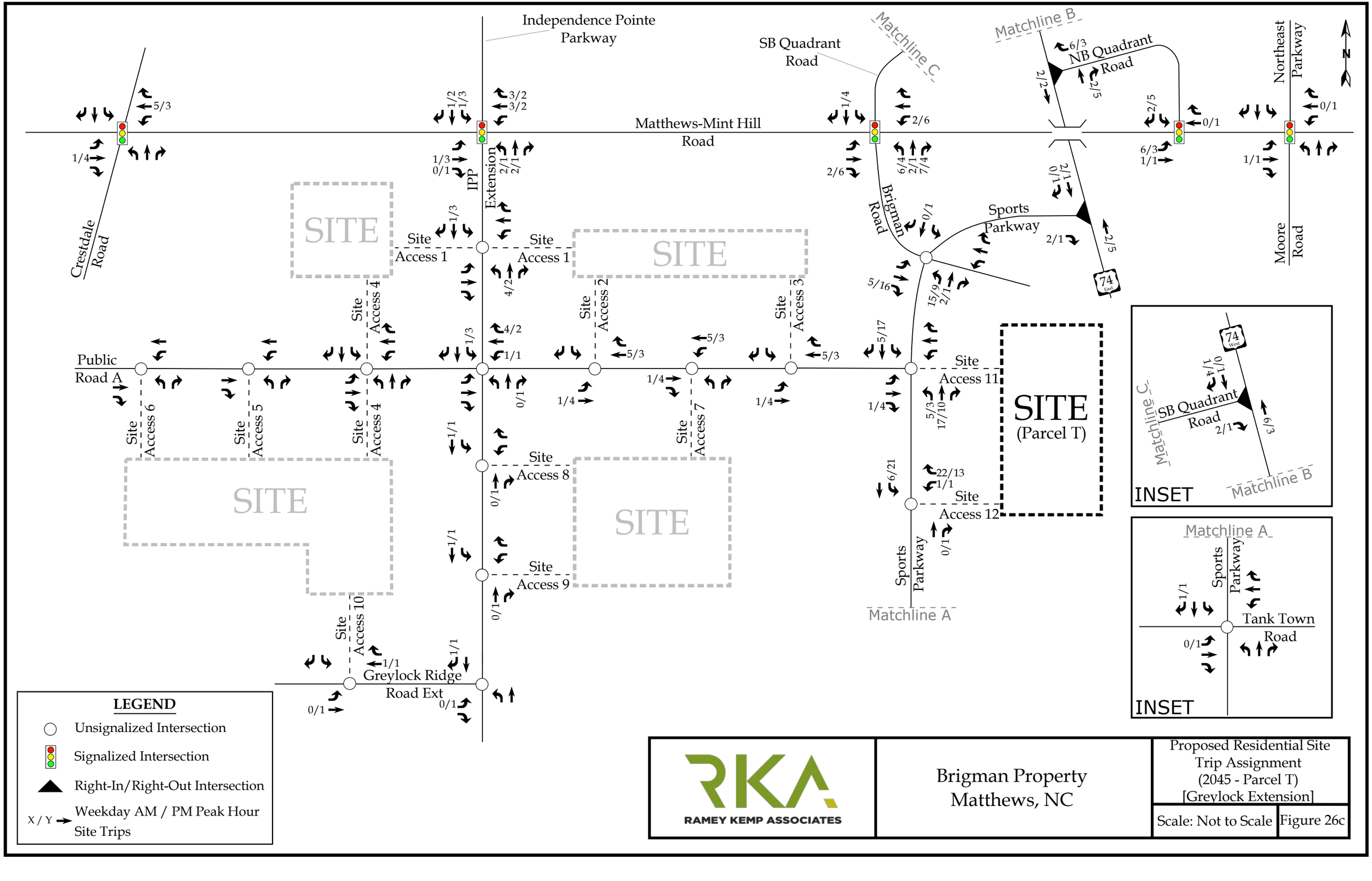


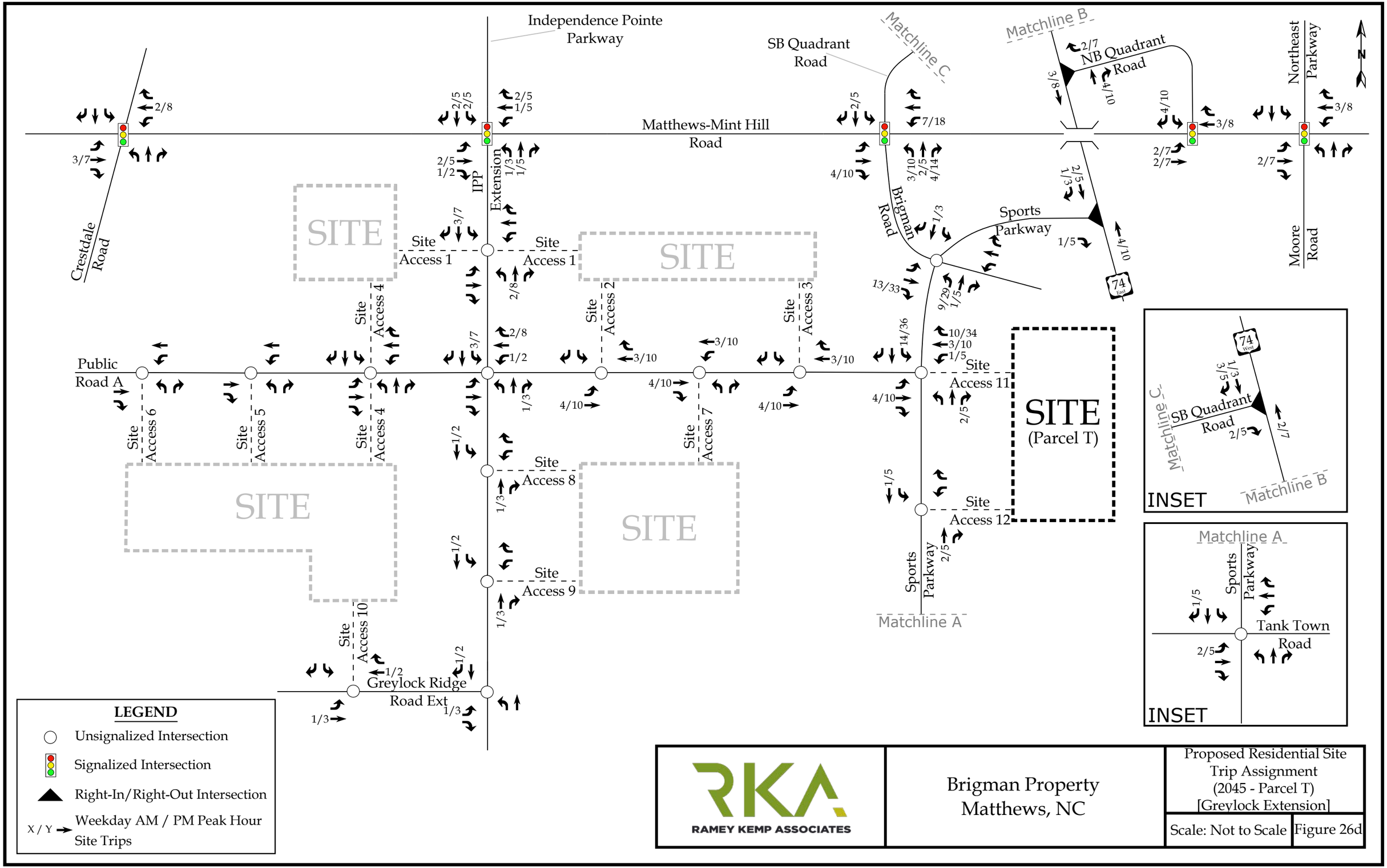
RAMEY KEMP ASSOCIATES

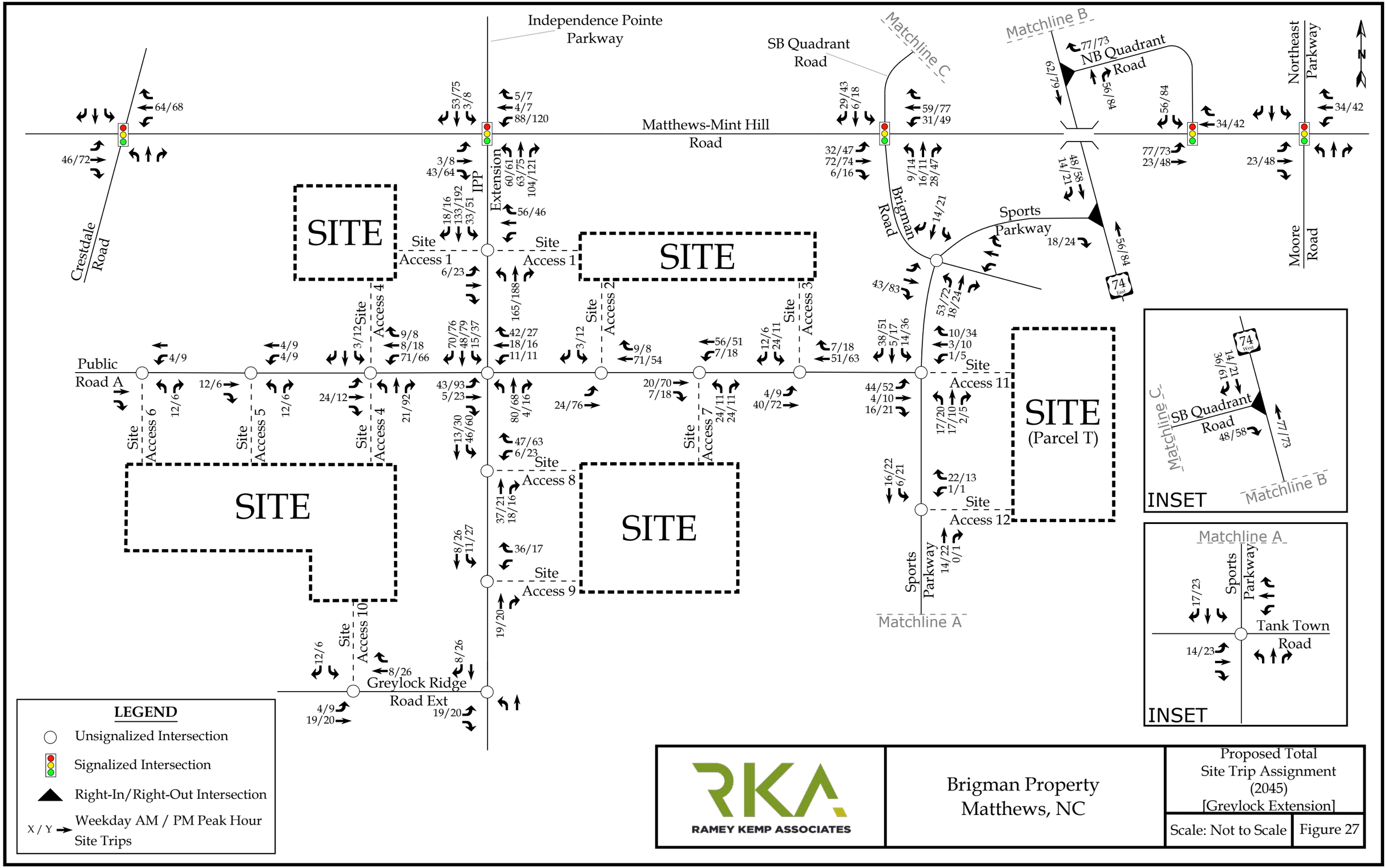
Brigman Property
Matthews, NC

Proposed Commercial Site Trip Assignment
(2045 - Main Site)
[Greylock Extension]

Scale: Not to Scale | Figure 26b


Independence Pointe Parkway
SB Quadrant Road
Matchline C
Matchline B
NB Quadrant Road
Northeast Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway
Moore Road
SITE
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Public Road A
Greylock Ridge Road Ext
SITE (Parcel T)
Matchline A
Tank Town Road
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Site Trips
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Residential Site Trip Assignment
(2045 - Parcel T)
[Greylock Extension]
Scale: Not to Scale
Figure 26c


Independence Pointe Parkway
SB Quadrant Road
Matchline C
Matchline B
NB Quadrant Road
Northeast Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway
Moore Road
SITE
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Public Road A
Greylock Ridge Road Ext
SITE (Parcel T)
Tank Town Road
Matchline A
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Site Trips
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Proposed Residential Site Trip Assignment
(2045 - Parcel T)
[Greylock Extension]
Scale: Not to Scale
Figure 26d



RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

Proposed Total
Site Trip Assignment
(2045)
[Greylock Extension]

Scale: Not to Scale | Figure 27

5. BUILD TRAFFIC CONDITIONS

5.1. 2025/2026/2032 Build Peak Hour Traffic Volumes

To estimate traffic conditions for Phase 1, the total site trips were added to the 2025 no-build traffic volumes to determine the 2025 build traffic volumes. The same methodology was used to calculate the 2026 and 2032 build traffic conditions using the 2026 no-build and 2032 build traffic volumes, respectively. Refer to Figures 28-30B for an illustration of the 2025, 2026, and 2032 build peak hour traffic volumes with the proposed site fully developed.

5.2. Analysis of 2025/2026/2032 Build Peak Hour Traffic Conditions

Study intersections were analyzed with the build traffic volumes using the same methodology previously discussed for existing and no-build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 7 of this report.

6. FUTURE TRAFFIC CONDITIONS

6.1. 2037 Future Peak Hour Traffic Volumes

Per the Town of Matthew's UDO guidelines, an analysis of the proposed development five (5) years after is required. In order to estimate traffic conditions five years beyond buildout of the proposed development, 2022 existing traffic volumes were grown to the future year 2037 using the Town and NCDOT approved 1.5% annual growth rate. Adjacent development trips (Figure 6) and proposed development total site trips (Figures 15, 17, 19, 21, and 23) were added to the projected volumes to determine 2037 future traffic volumes. Refer to Figures 31A and 31B for an illustration of the 2037 future traffic volumes with and without the completed Greylock Ridge Road Extension, respectively.

6.2. Analysis of 2037 Future Peak Hour Traffic Conditions

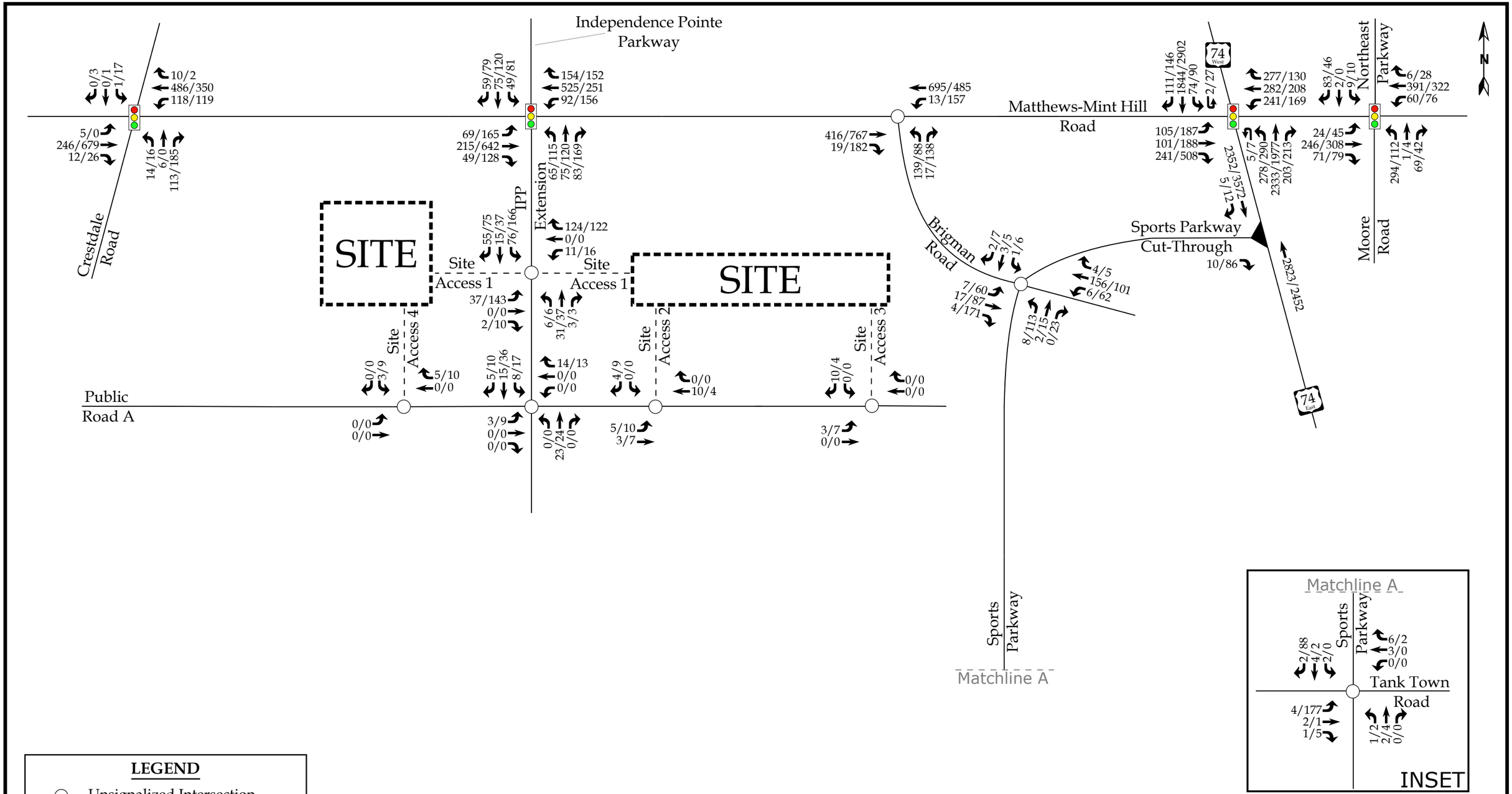
Study intersections were analyzed with the build traffic volumes using the same methodology previously discussed for existing and no-build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 7 of this report.

6.3. 2045 Future Peak Hour Traffic Volumes

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2045 No-Build traffic volumes to determine the 2045 Future traffic volumes. Refer to Figures 32A and 32B for an illustration of the 2045 Future traffic volumes with and without the completed Greylock Ridge Extension, respectively.

6.4. Analysis of 2045 Future Peak Hour Traffic Conditions

Study intersections were analyzed with the 2045 future traffic volumes using the same methodology previously discussed for 2045 No-Build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 7 of this report.



LEGEND

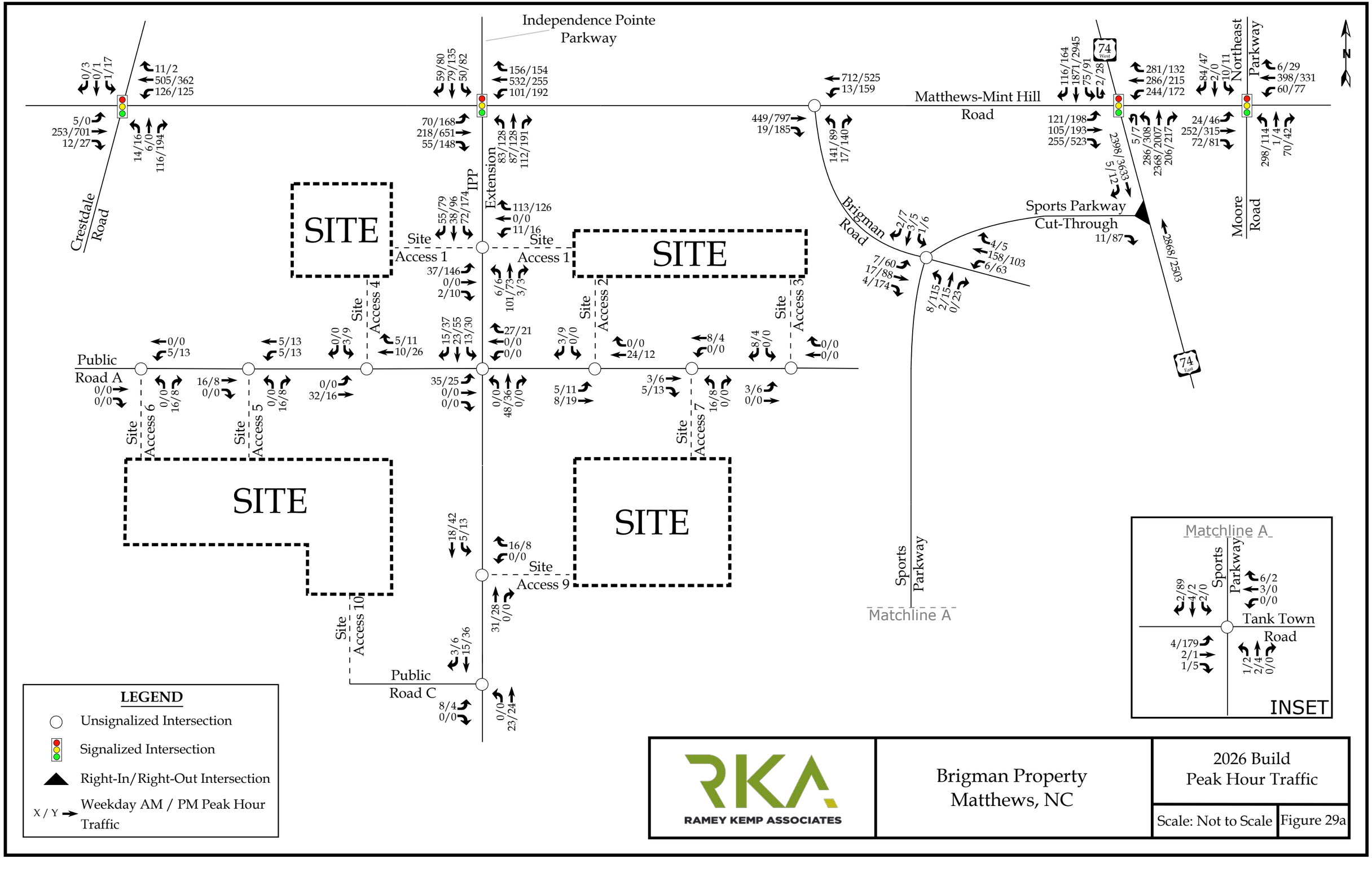
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2025 Build
Peak Hour Traffic

Scale: Not to Scale | Figure 28

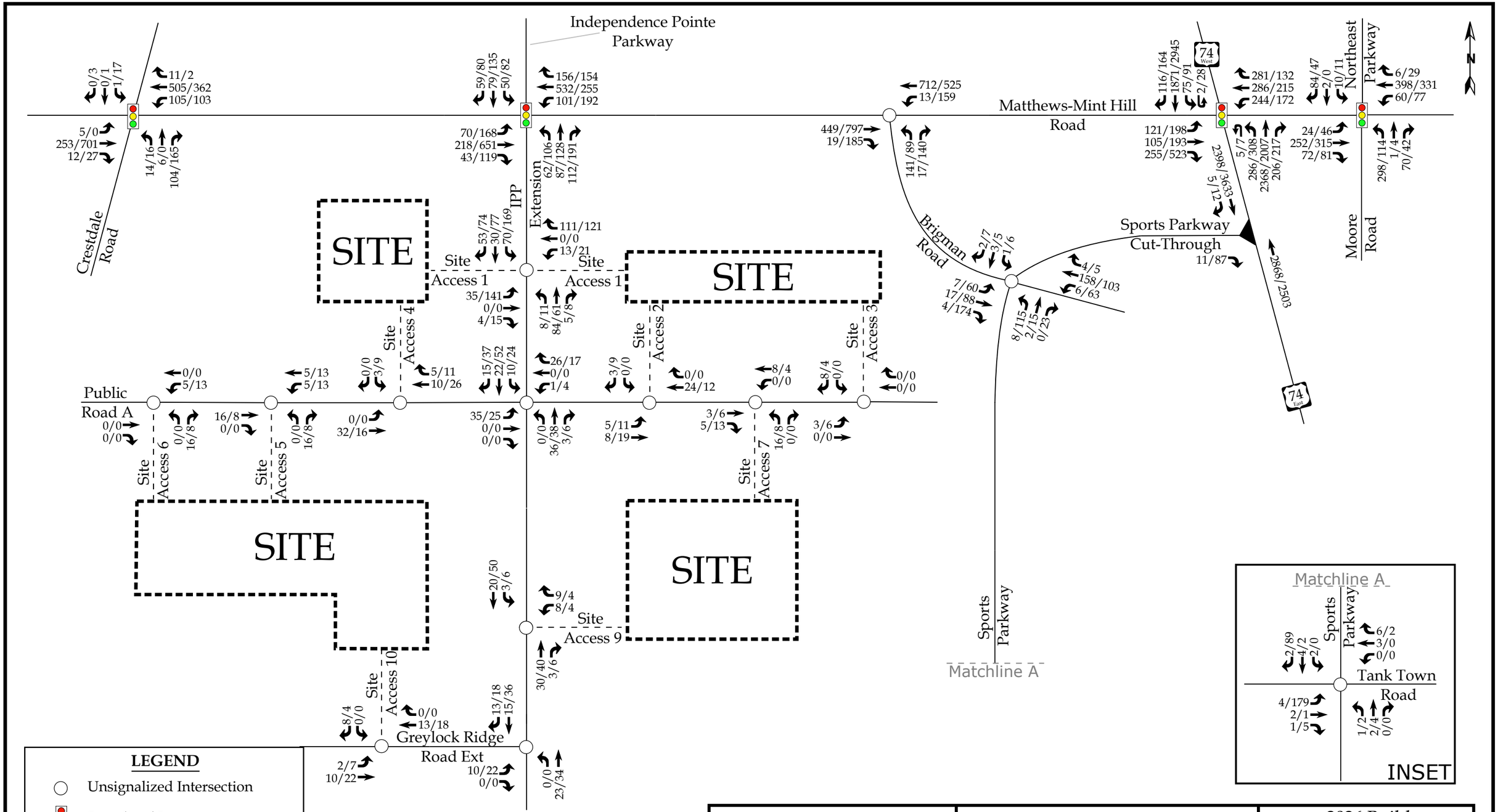


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2026 Build
Peak Hour Traffic

Scale: Not to Scale | Figure 29a

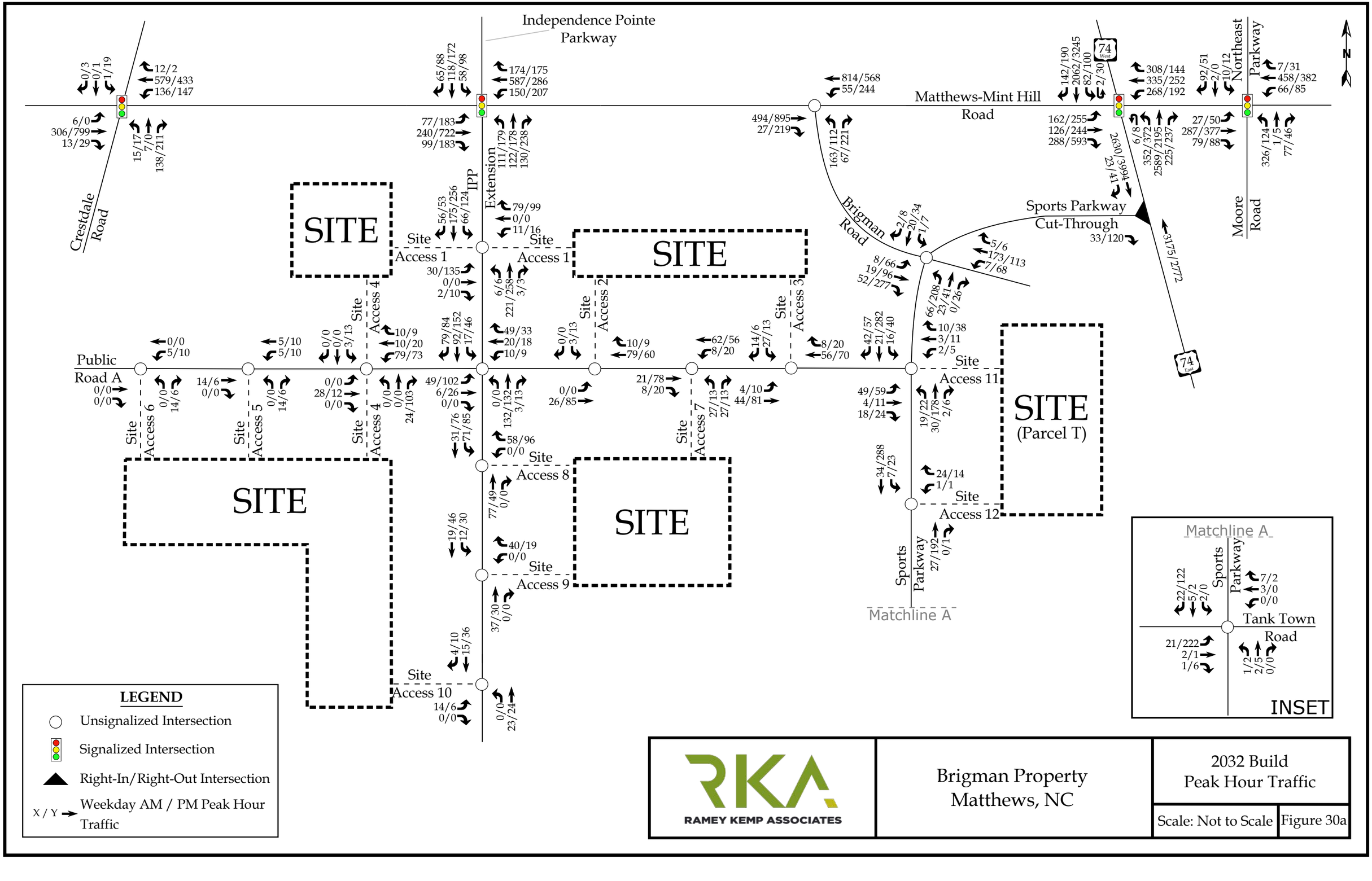


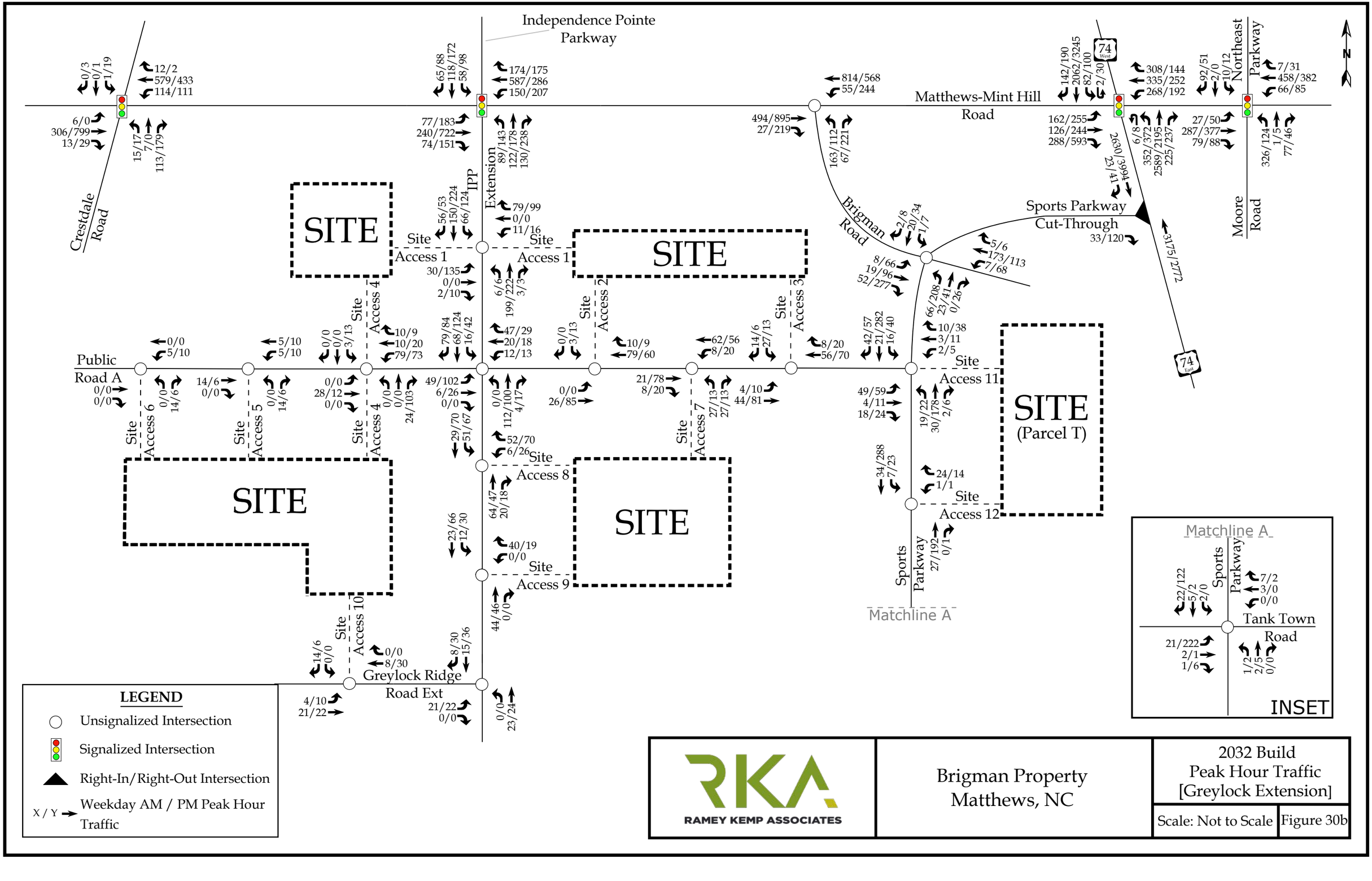
RAMEY KEMP ASSOCIATES

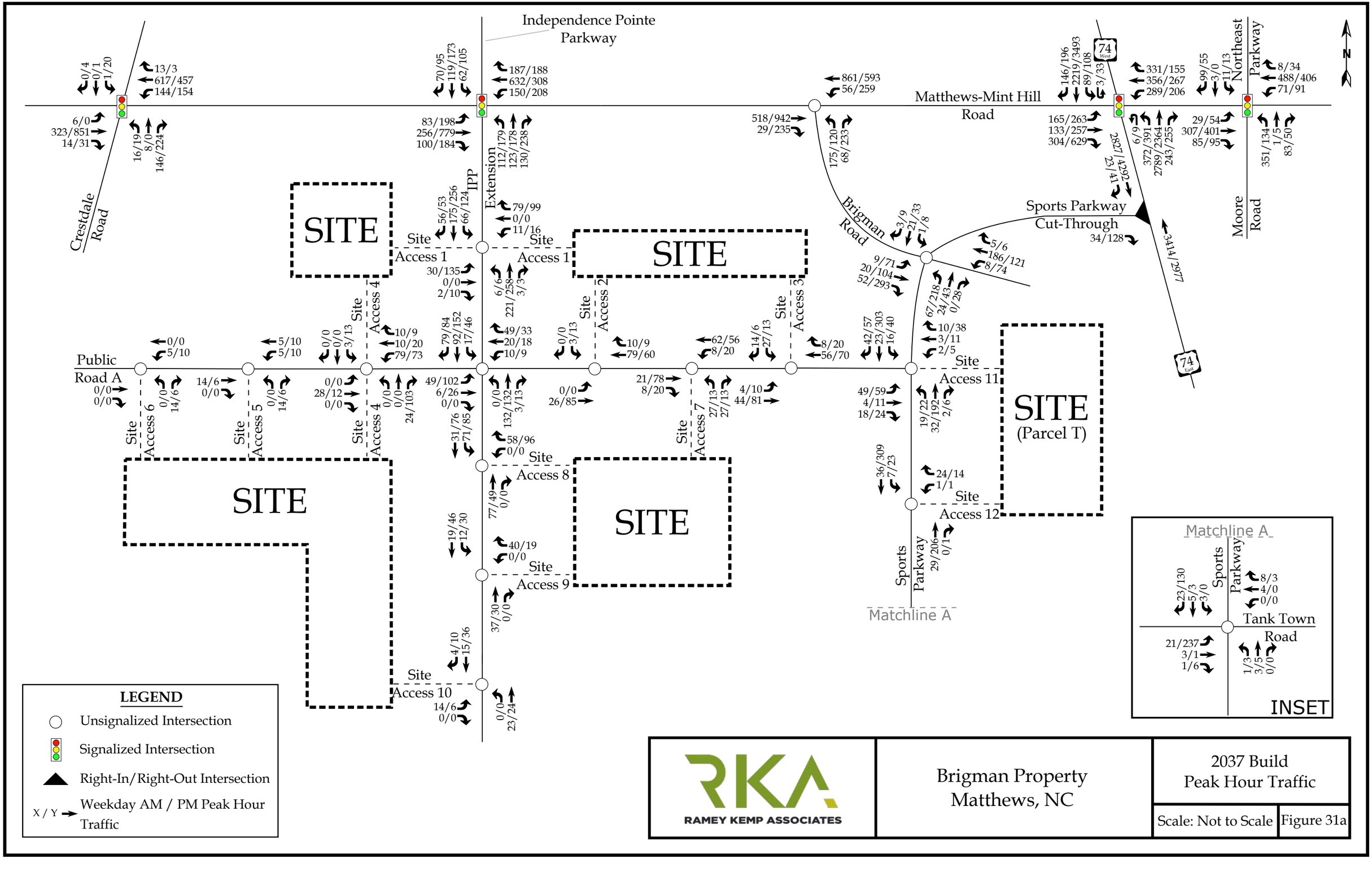
Brigman Property
Matthews, NC

2026 Build
Peak Hour Traffic
[Greylock Extension]

Scale: Not to Scale | Figure 29b


Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway Cut-Through
Moore Road
Northeast Parkway
Public Road A
Sports Parkway
Tank Town Road
SITE
SITE
SITE
SITE
(Parcel T)
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Matchline A
Matchline A
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Traffic
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
2032 Build
Peak Hour Traffic
Scale: Not to Scale
Figure 30a


Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Moore Road
Northeast Parkway
Brigman Road
Sports Parkway Cut-Through
Public Road A
Greylock Ridge Road Ext
Sports Parkway
Tank Town Road
SITE
SITE
SITE
SITE
(Parcel T)
SITE
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Matchline A
Matchline A
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In/Right-Out Intersection
X / Y Weekday AM / PM Peak Hour Traffic
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
2032 Build
Peak Hour Traffic
[Greylock Extension]
Scale: Not to Scale
Figure 30b



RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2037 Build
Peak Hour Traffic

Scale: Not to Scale | Figure 31a

Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway Cut-Through
Moore Road
Northeast Parkway
Public Road A
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Greylock Ridge Road Ext
Sports Parkway
Tank Town Road
Matchline A
SITE
SITE
SITE
SITE
SITE
(Parcel T)

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

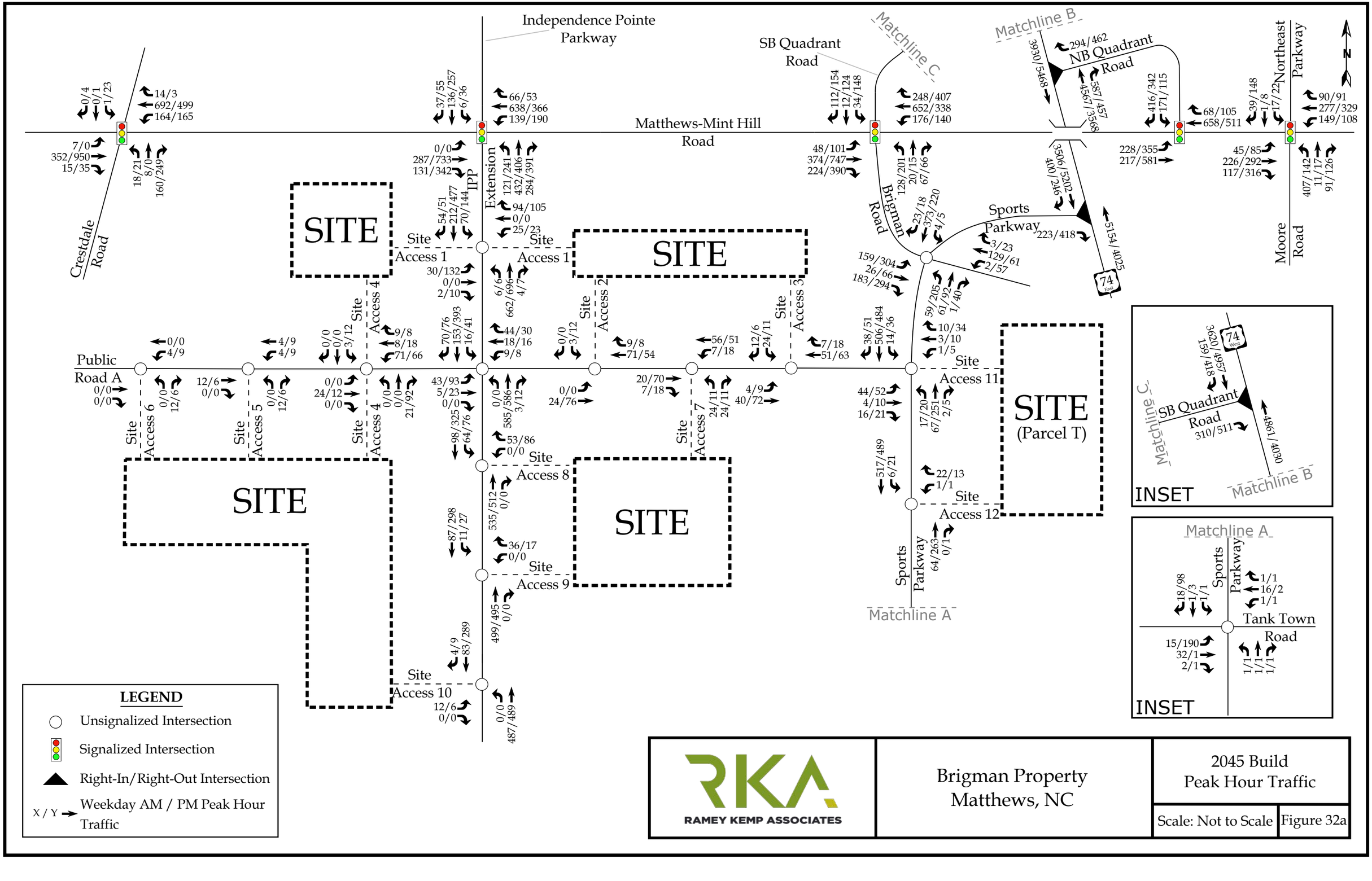
INSET

RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2037 Build
Peak Hour Traffic
[Greylock Extension]

Scale: Not to Scale | Figure 31b

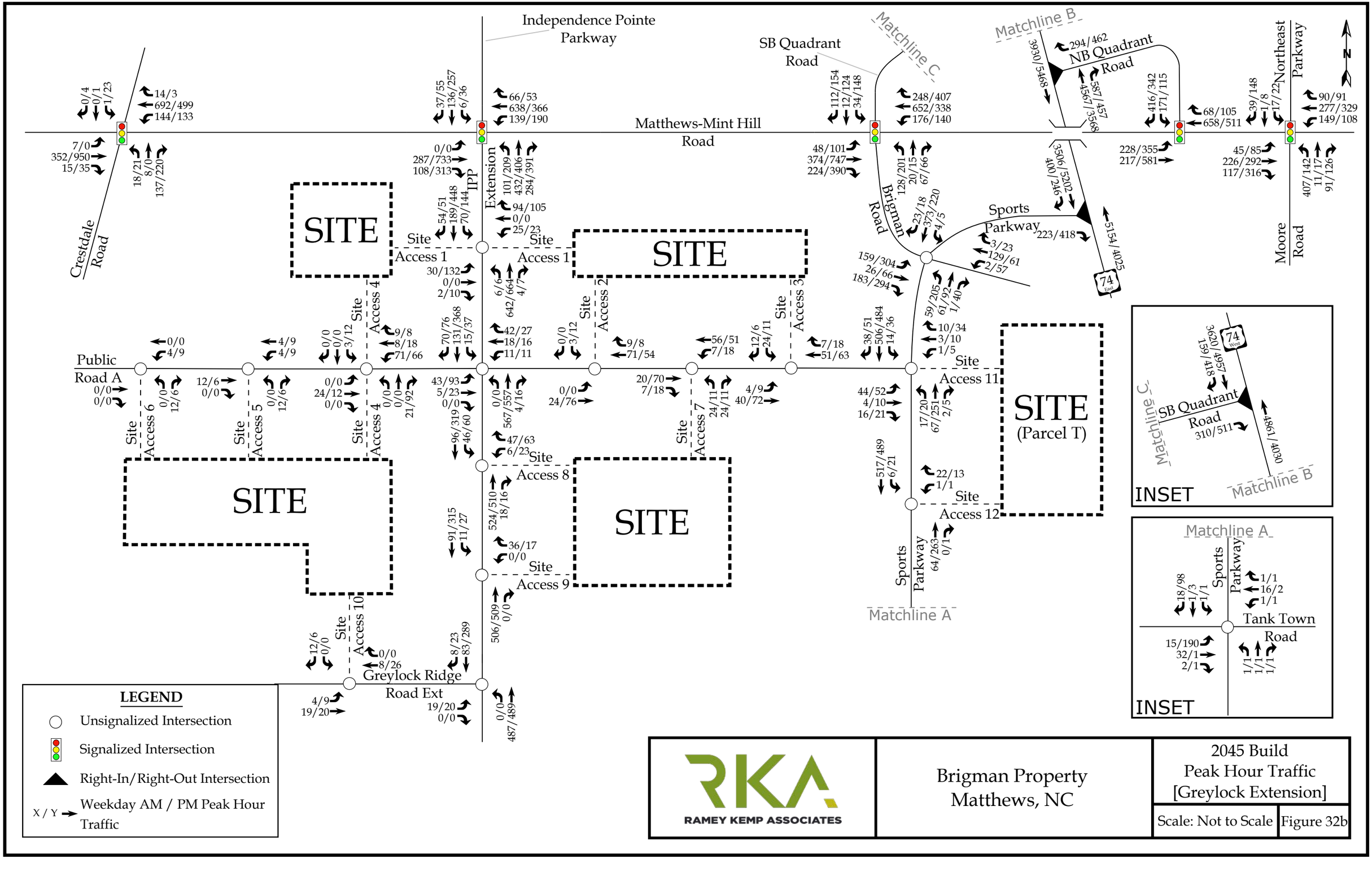


RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2045 Build
Peak Hour Traffic

Scale: Not to Scale | Figure 32a



RAMEY KEMP ASSOCIATES

Brigman Property
Matthews, NC

2045 Build
Peak Hour Traffic
[Greylock Extension]

Scale: Not to Scale | Figure 32b

7. TRAFFIC ANALYSIS PROCEDURE

Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual* (HCM), 6th Edition published by the Transportation Research Board. Capacity and level of service are the design criteria for this traffic study. A computer software package, Synchro (Version 10.3), was used to complete the analyses for the study area intersections. Please note that the unsignalized capacity analysis does not provide an overall level of service for an intersection; only delay for an approach with a conflicting movement.

The HCM defines capacity as "the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions." Level of service (LOS) is a term used to represent different driving conditions and is defined as a "qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers." Level of service varies from Level "A" representing free flow, to Level "F" where breakdown conditions are evident. Refer to Table 5 for HCM levels of service and related average control delay per vehicle for both signalized and unsignalized intersections. Control delay as defined by the HCM includes "initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay". An average control delay of 50 seconds at a signalized intersection results in LOS "D" operation at the intersection.

Table 5: Highway Capacity Manual – Levels-of-Service and Delay

UNSIGNALIZED INTERSECTION		SIGNALIZED INTERSECTION	
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
A	0-10	A	0-10
B	10-15	B	10-20
C	15-25	C	20-35
D	25-35	D	35-55
E	35-50	E	55-80
F	>50	F	>80

7.1. Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to the NCDOT Congestion Management Guidelines.

8. CAPACITY ANALYSIS

8.1. US 74 [EB-WB] and Matthews-Mint Hill Road [NB-SB]

The existing signalized intersection of US 74 and Matthews-Mint Hill Road was analyzed under 2022 existing, 2025 no-build, 2025 build, 2026 build, 2032 build, 2037 build, and 2045 future traffic conditions with the lane configurations and traffic control shown in Table 6. Refer to Table 6 for a summary of the analysis results. Refer to Appendix F for the Synchro capacity analysis reports.

Capacity analysis indicates that this intersection is expected to operate at an overall LOS F during the weekday AM and PM peak hours under existing and all future traffic conditions. All approaches are expected to operate at less than desirable levels of service during the weekday AM and PM peak hours. SimTraffic indicated the existing poor operation of this intersection would cause long queues throughout the network.

Construction of an additional through lane on the eastbound and westbound approaches of US 74, and construction of an additional eastbound right turn lane, as well as, extending the storage length of the existing left turn lane along Matthews-Mint Hill Road will help mitigate impacts at this intersection. However, the intersection will become an overpass as part of U-2509.

Table 6: Analysis Summary of US 74 and Matthews-Mint Hill Road

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2022 Existing Conditions	EBUL	450'	181	398	F	98.9	D (39.7)	F (98.6)	297	550	F	127.4	F (87.2)	F (109.1)
	EBT (2)	-	846	584	D	37.3			1975	1026	F	85.6		
	EBTR		846	495					1975	910				
	WBL	-	604	377	F	147.8	F (115.7)		622	379	F	199.3	E (67.2)	
	WBT (2)	-	2368	393	F	121.6			1831	384	E	58.2		
	WBR	-	122	193	A	9.0			148	157	B	11.7		
	NBL	125'	96	123	F	85.3	F (229.6)		174	124	F	87.4	F (361.9)	
	NBT	-	201	877	F	113.5			324	887	F	102.4		
	NBR	475'	577	575	F	317.6			1234	575	F	520.5		
	SBL	400'	470	438	F	120.4	F (135.9)		300	346	F	109.8	F (113.7)	
	SBT	-	534	775	F	111.1			343	357	F	117.7		
	SBR	800'	723	775	F	170.9			276	218	F	113.5		

2025 No-Build Conditions	EBUL	450'	241	294	F	185.8	D (47.5)	E (80.0)	304	550	F	166.1	F (126.5)	F (111.1)
	EBT (2)	-	893	588	D	42.1			1693	1225	F	124.9		
	EBTR		893	486					1693	1216				
	WBL	-	537	378	F	106.1	F (84.8)		579	379	F	156.4	D (52.9)	
	WBT (2)	-	2035	388	F	89.4			1423	383	D	44.1		
	WBR	-	72	134	A	3.9			100	121	A	6.6		
	NBL	125'	229	224	F	169.9	F (107.7)		393	224	F	203.4	F (188.7)	
	NBT	-	281	630	F	181.4			399	884	F	175.0		
	NBR	475'	286	482	D	54.8			1001	575	F	188.7		
	SBL	400'	585	500	F	149.6	F (132.5)		424	500	F	192.4	F (174.8)	
	SBT	-	651	818	F	158.7			458	814	F	188.2		
	SBR	800'	565	796	F	91.8			313	786	F	132.2		
2025 Build Conditions	EBUL	450'	241	478	F	185.8	D (48.6)	F (84.1)	304	550	F	166.1	F (132.0)	F (122.1)
	EBT (2)	-	906	608	D	43.3			1722	1228	F	130.7		
	EBTR		906	520					1722	1221				
	WBL	-	581	375	F	110.0	F (85.3)		671	377	F	202.5	E (59.8)	
	WBT (2)	-	2035	386	F	89.4			1423	388	D	44.1		
	WBR	-	72	134	A	3.9			100	127	A	6.6		
	NBL	125'	329	225	F	295.6	F (143.1)		403	225	F	267.5	F (222.2)	
	NBT	-	299	883	F	199.4			384	888	F	206.2		
	NBR	475'	352	575	D	53.0			1003	575	F	211.5		
	SBL	400'	589	500	F	149.7	F (137.0)		421	500	F	192.7	F (191.5)	
	SBT	-	680	816	F	170.6			509	815	F	227.4		
	SBR	800'	565	796	F	91.8			311	796	F	132.4		
2026 No-Build Conditions	EBUL	450'	262	498	F	207.9	D (49.7)	F (82.7)	299	550	F	149.2	F (127.3)	F (115.9)
	EBT (2)	-	951	628	D	43.5			1720	1217	F	126.5		
	EBTR		951	514					1720	1214				
	WBL	-	555	378	F	108.9	F (84.1)		598	380	F	178.0	E (60.3)	
	WBT (2)	-	2155	395	F	88.2			1473	386	D	50.4		
	WBR	-	75	116	A	3.9			104	139	A	6.9		
	NBL	125'	246	208	F	189.7	F (112.0)		391	224	F	205.7	F (200.8)	
	NBT	-	287	554	F	178.9			408	887	F	178.9		
	NBR	475'	309	484	E	56.7			1030	575	F	207.0		
	SBL	400'	636	500	F	174.7	F (148.2)		424	500	F	198.6	F (180.4)	
	SBT	-	694	822	F	171.7			468	816	F	193.7		
	SBR	800'	610	796	F	102.0			321	794	F	137.3		

2026 Build Conditions	EBUL	450'	215	300	F	151.4	D (48.6)	F (93.2)	321	550	F	166.9	F (169.4)	F (136.3)
	EBT (2)	-	870	573	D	44.6			1933	1215	F	169.5		
	EBTR		870	480					1933	1219				
	WBL	-	568	378	F	109.3	F (108.1)		737	377	F	204.6	E (72.6)	
	WBT (2)	-	1946	388	F	117.0			1580	386	E	58.8		
	WBR	-	75	115	A	4.3			114	137	A	7.7		
	NBL	125'	350	225	F	250.6	F (131.1)		471	224	F	193.2	F (172.6)	
	NBT	-	287	883	F	174.6			436	884	F	142.3		
	NBR	475'	420	575	E	56.5			1055	575	F	176.0		
	SBL	400'	543	500	F	138.6	F (131.9)		436	500	F	174.2	F (178.2)	
	SBT	-	637	816	F	174.4			549	804	F	215.2		
	SBR	800'	514	796	F	82.8			320	689	F	123.3		
2032 No-Build Conditions	EBUL	450'	284	501	F	230.2	E (55.8)	F (106.5)	368	550	F	221.1	F (179.5)	F (151.7)
	EBT (2)	-	1085	840	D	49.0			2089	1219	F	177.8		
	EBTR		1085	672					2089	1210				
	WBL	-	659	380	F	122.2	F (121.2)		683	378	F	200.7	F (83.2)	
	WBT (2)	-	2494	384	F	131.3			1790	387	E	76.0		
	WBR	-	79	132	A	3.8			116	139	A	7.0		
	NBL	125'	264	225	F	205.9	F (128.4)		409	224	F	193.6	F (215.1)	
	NBT	-	332	823	F	227.1			441	888	F	185.2		
	NBR	475'	341	575	E	59.8			1180	575	F	233.0		
	SBL	400'	695	500	F	196.4	F (173.1)		497	500	F	237.1	F (214.1)	
	SBT	-	769	816	F	204.6			539	814	F	231.6		
	SBR	800'	700	796	F	122.4			370	796	F	158.5		
2032 Build Conditions	EBUL	450'	254	550	F	188.0	F (87.1)	F (135.0)	368	550	F	221.1	F (253.6)	F (195.2)
	EBT (2)	-	1233	1046	F	83.3			2294	1216	F	254.9		
	EBTR		1233	942					2294	1220				
	WBL	-	756	379	F	138.9	F (160.9)		913	376	F	281.9	F (118.6)	
	WBT (2)	-	2385	393	F	177.5			1866	382	F	102.2		
	WBR	-	89	110	A	4.9			134	123	A	8.9		
	NBL	125'	455	225	F	249.3	F (132.8)		403	224	F	252.5	F (185.2)	
	NBT	-	329	860	F	152.6			324	885	F	127.1		
	NBR	475'	491	575	E	58.6			884	575	F	180.1		
	SBL	400'	628	500	F	150.3	F (166.4)		508	500	F	246.9	F (226.3)	
	SBT	-	807	819	F	239.5			647	816	F	266.9		
	SBR	800'	620	796	F	100.9			350	796	F	128.0		

2037 Build Conditions	EBUL	450'	246	549	F	169.0	E (74.2)	F (87.6)	405	550	F	1155.0	F (133.3)	F (255.8)
	EBT **(3)**	-	908	757	E	70.5			1462	1140	F	94.1		
	EBTR		908	533					1462	1070				
	WBL	-	736	372	F	149.1	F (85.4)		946	369	F	502.1	F (421.5)	
	WBT **(3)**	-	1401	398	F	83.7			1620	377	F	448.9		
	WBR	-	100	144	A	5.7			315	171	D	40.5		
	NBL	**500'**	408	547	F	201.7	F (105.4)		661	600	F	453.5	F (227.3)	
	NBT	-	304	631	F	135.2			634	877	F	347.4		
	NBR **(2)**	**400'**	212	269	D	40.2			578	899	F	83.7		
	SBL	400'	556	500	F	109.9	F (118.2)		522	500	F	339.9	F (299.3)	
	SBT	-	724	803	F	168.0			679	803	F	428.6		
	SBR	800'	558	782	E	72.0			161	783	C	22.1		

8.2. Sports Parkway [NB-SB] and US 74 [EB-WB]

The existing unsignalized intersection of Sports Parkway /Driveway and US 74 was analyzed under 2022 existing traffic conditions with the lane configurations and traffic control. The expected intersection of Sports Parkway and US 74 was analyzed under 2022 existing, 2025 no-build, 2025 build, 2026 build, 2032 build, 2037 build, and 2045 future traffic conditions with lane configurations and traffic control shown in Table 7. Refer to Table 7 for a summary of the analysis results. Refer to Appendix G for the Synchro capacity analysis reports.

Capacity analysis indicates that the northbound minor street approach is expected to be impacted and experience delays under all analysis scenarios. While the levels of service and delay indicate poor operations at this intersection, SimTraffic queuing reports indicated that maximum queues are expected to be minimal during the peak hours. Due to the high volume of eastbound traffic on US 74, the minor street approach is expected to experience higher delays during the peak hours. Due to minimal queuing on the minor street approach, no improvements are recommended by the developer.

Table 7: Analysis Summary of Sports Parkway and US 74

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2022 Existing Conditions	EBT (2)	-	0	46	-	-	-	N/A	0	152	-	-	-	N/A
	EBTR	-	0	71	-	-			0	141	-	-		
	WBT (3)	-	0	1178	-	-	N/A		0	1182	-	-	N/A	
	NBR	-	5	49	D	31.5	D (31.5)		215	133	F	499	F (499.3)	
2025 No-Build Conditions	EBT (2)	-	0	11	-	-	-	N/A	0	154	-	-	-	N/A
	EBTR	-	0	0	-	-			0	161	-	-		
	WBT (3)	-	0	1181	-	-	N/A		0	1185	-	-	N/A	
	NBR	-	8	36	D	34.8	D (34.8)		250	136	F	737	F (737.1)	
2025 Build Conditions	EBT (2)	-	0	76	-	-	-	N/A	0	143	-	-	-	N/A
	EBTR	-	0	0	-	-			0	68	-	-		
	WBT (3)	-	0	1184	-	-	N/A		0	1186	-	-	N/A	
	NBR	-	8	36	E	35.8	D (35.8)		253	142	F	763	F (762.9)	

2026 No-Build Conditions	EBT (2)	-	0	68	-	-	-	N/A	0	213	-	-	-	N/A
	EBTR	-	0	78	-	-			0	77	-	-		
	WBT (3)	-	0	1182	-	-	N/A		0	1182	-	-	N/A	
	NBR	-	8	44	E	36.3	D (36.3)		258	127	F	801.4	F (801.4)	
2026 Build Conditions	EBT (2)	-	0	0	-	-	-	N/A	0	25	-	-	-	N/A
	EBTR	-	0	0	-	-			0	11	-	-		
	WBT (3)	-	0	1182	-	-	N/A		0	1176	-	-	N/A	
	NBR	-	8	40	E	37.5	D (37.5)		260	123	F	830.1	F (830.1)	
2032 No-Build Conditions	EBT (2)	-	0	74	-	-	-	N/A	0	118	-	-	-	N/A
	EBTR	-	0	0	-	-			0	7	-	-		
	WBT (3)	-	0	1178	-	-	N/A		0	1187	-	-	N/A	
	NBR	-	10	48	E	44.2	E (44.2)		313	150	F	1348.4	F (1348.4)	
2032 Build Conditions	EBT (2)	-	0	138	-	-	-	N/A	0	81	-	-	-	N/A
	EBTR	-	0	69	-	-			0	4	-	-		
	WBT (3)	-	0	1187	-	-	N/A		0	1178	-	-	N/A	
	NBR	-	38	84	F	61.3	F (61.3)		403	198	F	1893.7	F (1893.7)	
2037 Build Conditions	EBT **(3)**	-	0	76	-	-	-	N/A	0	145	-	-	-	N/A
	EBTR	-	0	8	-	-			0	64	-	-		
	WBT **(4)**	-	0	1184	-	-	N/A		0	1165	-	-	N/A	
	NBR	-	45	59	F	76.2	F (76.2)		448	144	F	2667.9	F (2667.9)	
2045* No-Build Conditions	EBT **(3)**	-	N/A	9	-	-	-	N/A	N/A	28	-	-	-	N/A
	EBTR	-	N/A	10	-	-			N/A	10	-	-		
	WBT **(4)**	-	N/A	0	-	-	N/A		N/A	283	-	-	N/A	
	NBR	-	N/A	132	-	-	N/A		N/A	582	-	-	N/A	
2045* Build Conditions	EBT **(3)**	-	N/A	14	-	-	-	N/A	N/A	21	-	-	-	N/A
	EBTR	-	N/A	15	-	-			N/A	10	-	-		
	WBT **(4)**	-	N/A	0	-	-	N/A		N/A	977	-	-	N/A	
	NBR	-	N/A	152	-	-	N/A		N/A	583	-	-	N/A	

*Due to Synchro limitations, a TWSC Report could not be generated for an approach with more than 3 through lanes.

8.3. Matthews-Mint Hill Road [EB-WB] and Crestdale Road [NB-SB]

The existing signalized intersection of Matthews-Mint Hill Road and Crestdale Road was analyzed under 2022 existing, 2025 no-build, 2025 build, 2026 build, 2032 build, 2037 build, and 2045 future traffic conditions with the lane configurations and traffic control shown in Table 8. Refer to Table 8 for a summary of the analysis results. Refer to Appendix H for the Synchro capacity analysis reports.

Capacity analysis indicates that this intersection is expected to operate at overall acceptable levels of service during the peak hours under existing and all future traffic conditions. Impacts are expected on the northbound approach during the PM peak hour under 2032 Build traffic conditions. However, delays are only expected to increase by less than 3.0 seconds. No improvements are recommended by the developer.

Table 8: Analysis Summary of Matthews-Mint Hill Road and Crestdale Road

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2022 Existing Conditions	EBL	175'	4	30	A	5.0	A (5.8)	A (7.7)	4	226	A	5.2	A (9.8)	B (10.5)
	EBTR	-	52	101	A	5.8			252	1073	A	9.8		
	WBL	175'	29	79	A	6.0	A (7.0)		38	102	A	8.2	A (6.7)	
	WBT	-	118	165	A	7.3			86	96	A	6.3		
	WBR	325'	6	13	A	5.0			4	10	A	5.2		
	NBLT	-	17	94	B	13.6	B (14.3)		21	326	B	16.8	C (20.2)	
	NBR	150'	47	86	B	14.5			102	242	C	20.6		
	SBLTR	-	11	37	B	11.7	B (11.7)		25	72	B	16.9	B (16.9)	
2025 No-Build Conditions	EBL	175'	27	39	F	88.2	A (8.5)	C (23.3)	18	128	E	77.8	B (11.8)	C (25.4)
	EBTR	-	144	148	A	6.7			507	831	B	11.4		
	WBL	175'	194	185	E	68.1	B (17.0)		205	177	F	93.5	C (23.5)	
	WBT	-	380	224	A	5.9			67	125	A	2.0		
	WBR	325'	7	8	A	4.1			1	2	A	2.5		
	NBLT	-	63	181	F	96.0	E (77.1)		57	896	F	82.2	E (72.6)	
	NBR	150'	187	177	E	73.3			260	250	E	71.4		
	SBLTR	-	40	62	F	89.0	F (89.0)		65	217	F	86.3	F (86.3)	
2025 Build Conditions	EBL	175'	27	32	F	88.2	A (9.0)	C (24.5)	18	122	E	77.8	B (13.2)	C (26.9)
	EBTR	-	158	177	A	7.4			567	847	B	12.9		
	WBL	175'	222	194	E	73.9	B (18.7)		219	182	F	90.1	C (24.2)	
	WBT	-	421	248	A	5.6			70	158	A	2.0		
	WBR	325'	6	10	A	3.9			1	5	A	2.5		
	NBLT	-	63	224	F	96.0	E (76.2)		57	992	F	82.2	E (73.1)	
	NBR	150'	201	204	E	72.6			291	250	E	72.1		
	SBLTR	-	40	42	F	89.0	F (89.0)		65	261	F	86.3	F (86.3)	

2026 No-Build Conditions	EBL	175'	27	35	F	93.4	A (8.6)	C (24.4)	18	128	E	77.8	B (11.8)	C (25.5)
	EBTR	-	149	177	A	6.7			510	890	B	11.5		
	WBL	175'	210	198	E	71.2	B (17.5)		206	187	F	95.2	C (23.6)	
	WBT	-	359	256	A	5.8			60	139	A	1.7		
	WBR	325'	7	10	A	4.0			1	5	A	2.2		
	NBLT	-	65	202	F	101.8	F (82.0)		57	897	F	83.0	E (73.2)	
	NBR	150'	199	194	E	78.1			264	250	E	72.0		
	SBLTR	-	41	54	F	94.1	F (94.1)		65	285	F	87.4	F (87.4)	
2026 Build Conditions	EBL	175'	25	39	E	78.0	A (8.8)	C (21.9)	20	81	F	82.8	B (14.5)	C (28.0)
	EBTR	-	163	152	A	7.4			631	751	B	14.1		
	WBL	175'	205	199	E	64.4	B (16.5)		225	193	F	82.4	C (22.8)	
	WBT	-	322	219	A	4.8			103	142	A	2.4		
	WBR	325'	6	10	A	3.8			1	5	A	2.5		
	NBLT	-	58	189	F	84.3	E (68.1)		60	873	F	89.0	E (78.5)	
	NBR	150'	183	184	E	65.2			318	250	E	77.4		
	SBLTR	-	37	62	E	78.6	E (78.6)		70	142	F	94.0	F (94.0)	
2026 Build Conditions *(Greylock)*	EBL	175'	25	30	E	78.0	A (8.1)	C (20.7)	20	83	F	82.8	B (12.4)	C (26.0)
	EBTR	-	153	143	A	6.7			575	867	B	12.1		
	WBL	175'	181	190	E	70.7	B (15.4)		196	174	F	98.7	C (22.9)	
	WBT	-	274	217	A	4.1			52	152	A	1.6		
	WBR	325'	5	15	A	3.7			1	8	A	2.0		
	NBLT	-	58	195	F	84.3	E (69.4)		60	984	F	89.0	E (78.9)	
	NBR	150'	170	183	E	66.4			279	250	E	77.7		
	SBLTR	-	37	58	E	78.6	E (78.6)		70	283	F	94.0	F (94.0)	
2032 No-Build Conditions	EBL	175'	30	42	F	93.7	A (9.3)	C (25.3)	20	274	F	82.8	B (13.4)	C (27.3)
	EBTR	-	166	188	A	7.3			632	1051	B	13.1		
	WBL	175'	221	220	E	70.8	B (18.9)		232	186	F	93.4	C (23.7)	
	WBT	-	423	227	A	7.6			90	201	A	2.4		
	WBR	325'	7	15	A	4.9			1	10	A	2.8		
	NBLT	-	70	215	F	102	F (81.7)		61	985	F	89.5	E (79.3)	
	NBR	150'	213	199	E	77.7			298	250	E	78.1		
	SBLTR	-	41	59	F	93.6	F (93.6)		73	447	F	95.2	F (95.2)	
2032 Build Conditions	EBL	175'	27	47	F	83.3	B (10.2)	C (24.4)	20	127	F	82.8	B (18.3)	C (29.7)
	EBTR	-	209	204	A	8.7			772	1085	B	18.1		
	WBL	175'	207	204	F	89.7	B (19.7)		243	215	F	80.2	C (21.9)	
	WBT	-	344	219	A	3.6			100	206	A	2.4		
	WBR	325'	3	10	A	1.8			1	11	A	2.2		
	NBLT	-	65	243	F	90.5	E (71.0)		62	985	F	93.1	F (82.2)	
	NBR	150'	224	230	E	67.8			351	250	F	81.1		
	SBLTR	-	38	66	F	83.4	F (83.4)		74	557	F	100.9	F (100.9)	
2032 Build Conditions *(Greylock)*	EBL	175'	27	38	F	83.3	A (9.3)	C (21.8)	20	181	F	82.8	B (15.9)	C (26.1)
	EBTR	-	196	208	A	7.8			724	1087	B	15.6		
	WBL	175'	177	168	F	91.4	B (17.1)		199	168	F	80.1	B (18.1)	
	WBT	-	297	181	A	2.7			103	154	A	2.4		
	WBR	325'	3	8	A	1.2			1	2	A	2.2		
	NBLT	-	65	194	F	90.5	E (71.7)		62	983	F	93.1	F (81.0)	
	NBR	150'	192	200	E	67.9			305	239	E	79.6		
	SBLTR	-	38	54	F	83.4	F (83.4)		74	470	F	100.9	F (100.9)	

2037 Build Conditions	EBL	175'	25	31	E	73.0	B (10.8)	C (21.4)	18	226	E	72.5	B (18.9)	C (26.8)
	EBTR	-	223	191	A	9.6			831	1082	B	18.7		
	WBL	175'	172	198	F	81.4	B (16.7)		227	212	E	65.4	B (17.9)	
	WBT	-	219	192	A	1.9			127	213	A	2.0		
	WBR	325'	2	0	A	0.7			1	5	A	2.0		
	NBLT	-	62	219	E	79.1	E (60.7)		61	982	F	81.5	E (71.1)	
	NBR	150'	206	215	E	57.7			337	250	E	70.1		
	SBLTR	-	35	49	E	72.6	E (72.6)		70	334	F	87.0	F (87.0)	
2037 Build Conditions *(Greylock)*	EBL	175'	25	43	E	73.0	A (9.9)	B (19.7)	18	73	E	72.5	B (15.8)	C (23.8)
	EBTR	-	210	180	A	8.7			737	1068	B	15.5		
	WBL	175'	152	190	F	84.3	B (15.4)		180	168	E	66.1	B (14.9)	
	WBT	-	244	179	A	2.1			115	135	A	1.8		
	WBR	325'	2	2	A	0.8			1	10	A	1.8		
	NBLT	-	62	201	E	79.1	E (61.4)		61	980	F	81.5	E (73.4)	
	NBR	150'	175	194	E	57.8			298	242	E	72.4		
	SBLTR	-	35	58	E	72.6	E (72.6)		70	314	F	87.0	F (87.0)	
2045 No-Build Conditions	EBL	175	22	35	D	52.7	B (10.8)	B (19.5)	15	176	D	52.2	B (19.9)	C (23.3)
	EBTR	-	198	200	A	9.8			754	780	B	19.8		
	WBL	175	202	206	E	76.5	B (17.8)		171	184	D	50.9	B (14.0)	
	WBT	-	176	287	A	4.7			149	109	A	2.7		
	WBR	-	2	5	A	1.1			2	5	A	1.8		
	NBLT	150	52	154	E	56.5	D (43.0)		51	383	E	58.5	D (52.7)	
	NBR	-	142	184	D	40.4			259	250	D	52.1		
	SBLTR	-	28	53	D	52.1	D (52.1)		60	100	E	61.6	E (61.6)	
2045 Build Conditions	EBL	175	22	38	D	52.9	B (11.7)	B (19.6)	15	128	D	52.2	C (24.5)	C (26.8)
	EBTR	-	237	218	B	10.9			962	878	C	24.4		
	WBL	175	227	207	E	71.9	B (17.5)		186	200	E	57.7	B (16.3)	
	WBT	-	173	229	A	5.0			210	224	A	2.8		
	WBR	-	3	8	A	1.5			0	2	A	1.5		
	NBLT	150	53	174	E	57.0	D (43.0)		51	476	E	58.5	E (56.6)	
	NBR	-	162	183	D	40.7			296	249	E	56.4		
	SBLTR	-	29	50	D	52.5	D (52.5)		60	101	E	61.6	E (61.6)	
2045 Build Conditions *(Greylock)*	EBL	175	22	39	D	52.9	B (10.7)	B (18.5)	15	229	D	52.2	C (21.8)	C (24.3)
	EBTR	-	222	212	A	9.9			863	894	C	21.7		
	WBL	175	204	215	E	74.8	B (16.6)		152	181	E	56.0	B (14.3)	
	WBT	-	188	258	A	4.9			215	180	A	3.2		
	WBR	-	2	11	A	0.9			0	2	A	1.8		
	NBLT	150	53	152	E	57.0	D (43.6)		51	389	E	58.5	E (56.0)	
	NBR	-	145	188	D	41.0			265	250	E	55.7		
	SBLTR	-	29	50	D	52.5	D (52.5)		60	89	E	61.6	E (61.6)	

8.4. Matthews-Mint Hill Road [EB-WB] and Independence Pointe Parkway [SB] / Driveway [NB-SB]

The existing unsignalized intersection of Matthews-Mint Hill Road and Independence Pointe Parkway / Driveway was analyzed under 2022 existing traffic conditions with lane configurations and traffic control shown in Table 5. STIP EB-5969 is expected to extend Independence Pointe parkway. The expected signalized intersection was analyzed under 2025 no-build, 2025 build, 2026 build, 2032 build, and 2037 build, and 2045 future traffic conditions with lane configurations and traffic control shown in Table 9. Refer to Table 9 for a summary of the analysis results. Refer to Appendix I for the Synchro capacity analysis reports.

Capacity analysis indicates that the westbound approach and overall level of service is expected to be impacted and degrade by one LOS when comparing 2025 no-build traffic conditions and 2025 build traffic conditions. Due to the degradation in LOS, mitigation was considered at this intersection.

Under 2025 Build – Improved traffic conditions, this intersection was analyzed with a northbound right turn lane on Independence Pointe Parkway. Capacity analysis indicates that construction of a northbound right turn lane will increase overall and approach operations as well as a decrease in maximum queues.

Capacity analysis indicates that the overall level of service is expected to operate at LOS F during the PM peak hour. Additionally, multiple approaches are expected to operate at LOS F during the peak hours as well. Additional improvements were also identified under 2032 Build traffic conditions in order to mitigate delays and queues during the PM peak hour. With the construction of these improvements, overall levels of service are expected to operate at LOS D during the peak hours under 2032 Build – Improved traffic conditions.

Table 9: Analysis Summary of Matthews-Mint Hill Road and Independence Pointe Parkway / Driveway

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2022 Existing Conditions	EBL	150'	8	88	A	9.4	A (9.4)	N/A	13	250	A	8.8	A (8.8)	N/A
	EBTR	-	0	0	-	-			0	750	-	-		
	WBL	175'	0	6	A	7.7	A (7.7)		0	26	A	9.1	A (9.1)	
	WBTR	-	0	21	-	-			0	32	-	-		
	NBLTR	-	8	38	C	22.2	C (22.2)		10	76	E	39.4	E (39.4)	
	SBL	-	28	72	D	29.6	C (21.2)		165	224	F	185.7	F (105.3)	
	SBTR	125'	10	75	B	13.6			10	982	B	10.9		
2025 No-Build Conditions	EBL	275'	161	166	F	85.7	C (29.9)	C (34.7)	278	375	F	88.5	D (39.9)	D (49.9)
	EBTR	-	221	238	B	13.9			578	755	C	28.7		
	WBL	175'	89	182	F	96.6	B (15.4)		91	247	F	101.0	C (26.8)	
	WBTR	-	209	390	A	9.2			112	407	B	13.3		
	NBL	200'	73	88	F	98.4	F (90.5)		155	300	F	92.1	F (90.3)	
	NBTR	-	141	174	F	87.4			338	396	F	89.6		
	SBL	250'	120	132	F	98.9	F (98.2)		166	172	F	98.0	F (85.6)	
	SBTR	-	238	228	F	97.9			284	259	E	79.6		
2025 Build Conditions	EBL	275'	159	177	F	86.9	C (31.5)	D (47.4)	282	375	F	87.4	D (48.1)	E (70.4)
	EBTR	-	252	304	B	16.9			808	756	D	39.6		
	WBL	175'	147	275	F	113.0	C (22.6)		201	260	F	199.5	E (65.8)	
	WBTR	-	212	412	B	10.3			106	446	B	14.1		
	NBL	200'	202	280	F	153.1	F (119.1)		265	300	F	113.0	F (118.5)	
	NBTR	-	371	390	F	105.1			591	914	F	120.7		
	SBL	250'	120	140	F	98.9	F (93.9)		166	254	F	98.0	F (85.0)	
	SBTR	-	263	251	F	92.2			338	325	E	79.8		
2025 Build Conditions - Improved	EBL	275'	146	154	F	82.7	C (31.5)	D (40.9)	270	375	E	79.6	D (50.1)	E (58.5)
	EBTR	-	227	268	B	18.0			1093	758	D	43.8		
	WBL	**300'**	184	166	F	92.4	C (25.1)		197	215	F	82.4	D (44.4)	
	WBTR	-	309	363	B	16.0			346	287	C	29.7		
	NBL	200'	137	138	F	93.9	E (69.2)		253	253	F	109.3	E (72.8)	
	NBT	-	142	172	E	68.1			205	316	E	69.5		
	NBR	**250'**	134	162	D	50.7			242	242	D	50.3		
	SBL	250'	112	120	F	92.6	F (90.0)		156	270	F	86.7	F (94.0)	
	SBTR	-	241	292	F	89.1			372	393	F	97.0		
2026 No-Build Conditions	EBL	275'	168	172	F	92.1	C (31.0)	D (36.1)	282	375	F	89.9	D (39.9)	D (49.9)
	EBTR	-	201	253	B	13.4			592	759	C	28.3		
	WBL	175'	93	201	F	105.2	B (16.4)		90	275	F	99.8	C (26.0)	
	WBTR	-	219	387	A	9.6			111	420	B	12.8		
	NBL	200'	76	81	F	104.7	F (96.5)		155	244	F	92.1	F (91.3)	
	NBTR	-	145	165	F	93.4			341	386	F	91.0		
	SBL	250'	128	124	F	106.4	F (100.3)		169	172	F	98.3	F (86.6)	
	SBTR	-	248	255	F	97.8			287	279	F	80.8		

2026 Build Conditions	EBL	275'	149	152	F	81.5	C (32.6)	D (43.1)	302	375	F	89.4	E (63.2)	E (70.0)
	EBTR	-	247	280	B	20.0			1278	759	E	57.6		
	WBL	**300'**	202	238	F	94.9	C (28.0)		256	283	F	93.0	D (50.7)	
	WBTR	-	369	446	B	18.1			354	380	C	30.9		
	NBL	200'	167	184	F	91.9	E (66.3)		314	279	F	129.1	F (82.7)	
	NBT	-	159	238	E	66.1			241	448	E	78.6		
	NBR	250'	163	202	D	47.6			299	336	D	54.3		
	SBL	250'	115	192	F	93.5	F (90.9)		172	279	F	96.5	F (112.3)	
	SBTR	-	249	250	F	90.0			467	491	F	118.3		
2026 Build Conditions *(Greylock)*	EBL	275'	149	158	F	80.4	C (32.3)	D (41.8)	299	375	F	96.8	D (54.8)	E (65.0)
	EBTR	-	252	265	B	19.4			979	757	D	45.6		
	WBL	**300'**	204	188	F	111.8	C (25.8)		254	331	F	88.4	D (48.7)	
	WBTR	-	499	311	B	13.2			350	405	C	30.0		
	NBL	200'	134	128	F	92.8	E (66.6)		267	285	F	126.8	F (80.6)	
	NBT	-	162	157	E	69.3			243	625	F	80.8		
	NBR	250'	168	207	D	49.9			295	335	D	54.7		
	SBL	250'	115	123	F	93.5	F (90.9)		172	312	F	96.5	F (108.2)	
	SBTR	-	249	244	F	90.0			455	626	F	112.7		
2032 No-Build Conditions	EBL	275'	183	186	F	95.3	C (32.2)	D (36.8)	322	375	F	91.0	D (43.9)	D (53.5)
	EBTR	-	218	261	B	13.6			769	755	C	33.1		
	WBL	175'	87	190	F	106.8	B (17.4)		93	274	F	104.0	C (27.9)	
	WBTR	-	207	396	B	11.2			223	443	B	15.4		
	NBL	200'	78	93	F	105.4	F (95.9)		164	300	F	103.7	F (98.8)	
	NBTR	-	149	175	F	92.3			372	621	F	97.0		
	SBL	250'	139	143	F	111.5	F (102.8)		204	225	F	106.4	F (91.6)	
	SBTR	-	259	235	F	99.0			314	363	F	84.1		
2032 Build Conditions	EBL	275'	185	162	F	115.1	D (36.9)	D (50.3)	326	375	F	88.1	F (93.7)	F (93.0)
	EBTR	-	228	244	B	19.1			1595	759	F	94.8		
	WBL	**300'**	294	255	F	98.0	D (35.4)		501	265	F	176.9	E (67.9)	
	WBTR	-	727	419	C	23.0			565	230	B	18.9		
	NBL	200'	236	205	F	104.0	E (71.7)		439	299	F	157.5	F (91.4)	
	NBT	-	219	226	E	70.7			314	902	E	76.3		
	NBR	250'	182	216	D	45.0			354	350	D	52.9		
	SBL	250'	132	137	F	98.2	F (97.8)		240	350	F	118.6	F (140.6)	
	SBTR	-	337	342	F	97.7			588	992	F	149.0		
2032 Build Conditions **(Improved)**	EBL	**325'**	156	146	F	84.5	C (31.8)	D (44.1)	253	324	E	75.4	D (46.3)	D (50.2)
	EBT	-	110	128	B	19.7			510	416	D	40.5		
	EBTR	**400'**	110	170					510	407				
	WBL	**300'**	211	399	E	67.7	D (36.4)		300	324	E	74.8	D (49.6)	
	WBTR	-	773	733	C	30.3			528	495	D	38.3		
	NBL	**200'**	202	203	F	86.1	E (55.8)		270	271	E	75.9	D (47.1)	
	NBT	-	172	200	D	52.8			210	279	D	44.8		
	NBR	**250'**	142	155	C	32.7			214	240	C	27.2		
	SBL	250'	102	160	E	70.1	E (77.0)		142	274	E	63.1	E (67.7)	
	SBTR	-	287	267	E	79.2			357	460	E	69.5		

2032 Build Conditions *(Greylock)*	EBL	275'	171	198	F	112.2	D (37.2)	D (50.5)	323	375	F	88.4	F (96.0)	F (90.2)
	EBTR	-	229	239	B	18.7			1504	758	F	97.6		
	WBL	**300'**	290	287	F	92.6	D (35.7)		489	289	F	167.5	E (64.5)	
	WBTR	-	648	437	C	24.4			565	282	B	18.2		
	NBL	200'	199	212	F	105.9	E (72.3)		363	284	F	152.6	F (86.5)	
	NBT	-	224	274	E	74.4			316	798	E	78.2		
	NBR	250'	187	252	D	47.2			354	350	D	52.9		
	SBL	250'	132	183	F	98.2	F (97.8)		240	350	F	118.6	F (126.6)	
	SBTR	-	337	329	F	97.7			564	1011	F	129.6		
2032 Build Conditions *(Greylock)* **(Improved)**	EBL	**325'**	155	162	F	91.7	C (29.7)	D (40.5)	274	401	E	72.3	D (42.2)	D (47.7)
	EBT	-	86	118	B	14.5			449	753	D	35.9		
	EBTR	**400'**	86	138	B	14.5			449	758	D	35.9		
	WBL	**300'**	214	199	E	67.6	C (29.9)		304	218	F	87.5	D (43.9)	
	WBTR	-	614	383	C	22.4			414	249	C	24.3		
	NBL	200'	173	172	F	87.7	E (55.3)		231	262	E	78.0	D (48.4)	
	NBT	-	175	165	E	55.6			227	555	D	50.4		
	NBR	**250'**	142	163	C	32.7			227	291	C	29.1		
	SBL	250'	102	161	E	70.1	E (77.0)		151	222	E	68.2	E (70.2)	
	SBTR	-	287	264	E	79.2			365	327	E	71.0		
2037 Build Conditions	EBL	**325'**	196	167	F	114.6	C (33.8)	D (48.1)	353	425	F	89.4	D (50.7)	E (57.4)
	EBT	-	102	123	B	15.0			612	758	D	42.8		
	EBTR	**400'**	102	144	B	15.0			612	500	D	42.8		
	WBL	**300'**	245	358	F	83.9	C (34.9)		368	207	F	107.6	D (50.7)	
	WBTR	-	964	488	C	25.9			567	202	C	26.8		
	NBL	200'	232	180	F	100.2	E (67.8)		339	299	F	96.8	E (60.3)	
	NBT	-	205	218	E	66.4			264	884	E	57.6		
	NBR	**250'**	170	199	D	41.3			270	350	C	34.9		
	SBL	250'	128	229	F	88.6	F (95.0)		190	326	F	86.1	F (86.5)	
	SBTR	-	357	380	F	97.1			451	493	F	86.7		
2037 Build Conditions *(Greylock)*	EBL	**325'**	193	182	F	113.2	C (34.5)	D (47.6)	351	425	F	90.5	D (47.7)	E (55.0)
	EBT	-	98	153	B	14.7			563	758	D	38.6		
	EBTR	**400'**	98	167					563	500				
	WBL	**300'**	256	291	F	87.6	C (33.1)		356	217	F	104.0	D (47.9)	
	WBTR	-	791	444	C	23.1			527	241	C	24.3		
	NBL	200'	203	185	F	105.6	E (69.7)		273	299	F	94.7	E (59.0)	
	NBT	-	210	274	E	71.0			269	957	E	60.5		
	NBR	**250'**	175	266	D	43.6			273	350	D	36.3		
	SBL	250'	128	134	F	88.6	F (95.0)		190	315	F	86.1	F (84.8)	
	SBTR	-	357	334	F	97.1			439	390	F	84.3		
2045 No-Build Conditions	EBL	275	11	29	D	55.0	C (21.9)	C (31.9)	4	23	E	58.5	D (46.3)	D (45.7)
	EBT	-	131	148	C	21.6			596	716	D	46.3		
	EBTR	300'	131	174					596	400				
	WBL	175'	83	274	D	54.2	C (22.1)		87	116	E	63.8	C (29.4)	
	WBT	-	368	431	B	19.8			206	222	C	23.4		
	WBTR	-	368	307			D (50.5)		206	129			E (56.9)	
	NBL	200'	74	300	E	60.5			193	300	E	61.5		
	NBTR	-	626	567	D	49.7			794	886	E	55.8		
	SBL	250'	15	40	D	52.2	C (31.0)		56	83	E	57.0	D (40.7)	
	SBTR	-	109	157	C	30.4			257	274	D	38.8		

2045 Build Conditions	EBL	275	8	28	D	55.0	C (22.2)	C (32.2)	4	98	E	62.8	D (37.1)	D (52.3)
	EBT	-	153	136	C	21.9			587	683	D	37.0		
	EBTR	300'	153	173					587	400				
	WBL	175'	174	250	D	50.2	C (24.2)		249	238	F	93.3	D (44.8)	
	WBT	-	353	380	B	19.1			160	264	C	22.9		
	WBTR	-	353	332			D (42.7)		160	107			E (62.0)	
	NBL	200'	166	300	E	62.9			377	300	F	94.5		
	NBT	-	440	721	D	50.9			569	944	E	68.3		
	NBR	**100'**	200	200	C	21.6	D (44.4)		403	200	D	35.3	F (83.2)	
	SBL	250'	21	33	D	52.7			67	194	E	59.0		
	SBT	-	145	189	D	48.0			397	497	F	96.7		
	SBR	**100'**	43	110	C	29.8			73	200	D	35.6		
2045 Build Conditions *(Greylock)*	EBL	275	9	36	E	56.8	C (22.0)	C (31.6)	4	32	E	62.0	D (40.8)	D (48.4)
	EBT	-	144	136	C	21.7			595	730	D	40.7		
	EBTR	300'	144	162					595	400				
	WBL	175'	174	193	D	52.1	C (23.9)		237	226	E	77.4	D (40.1)	
	WBT	-	360	325	B	18.3			166	250	C	23.3		
	WBTR	-	360	251					166	433				
	NBL	200'	143	300	E	61.3	D (41.7)		333	300	F	92.4	E (56.9)	
	NBT	-	440	760	D	50.5			544	948	E	62.3		
	NBR	**100'**	200	200	C	21.4			385	200	C	32.3		
	SBL	250'	21	38	D	52.7	D (42.9)		64	100	E	59.0	E (61.4)	
	SBT	-	143	208	D	46.2			347	342	E	67.9		
	SBR	**100'**	42	103	C	28.9			70	200	C	32.5		

8.5. Matthews-Mint Hill Road [EB-WB] and Brigman Road [NB]

The existing unsignalized intersection of Matthews-Mint Hill Road and Brigman Road was analyzed under 2022 existing, 2025 no-build, 2025 build, 2026 build, 2032 build, 2037 build, and 2045 future traffic conditions with the lane configurations and traffic control shown in Table 10. Refer to Table 10 for a summary of the analysis results. Refer to Appendix J for the Synchro capacity analysis reports.

Capacity analysis of 2022 existing traffic conditions indicates that the major-street left-turn movement currently operates at a LOS B or better during the weekday AM and PM peak hours and that the minor-street approach operates at LOS D during the weekday AM peak hour and at LOS E during the weekday PM peak hour.

Capacity analysis of 2025 no-build and 2025 build traffic conditions indicate that the major-street left-turn movement is expected to operate at LOS B or better during the weekday AM and PM peak hours while the minor-street approach is expected to operate at LOS F during the weekday AM and PM peak hours. These levels-of-service are not uncommon for stop-controlled minor-street approaches at intersections with heavy mainline (Matthews-Mint Hill Road) traffic. It should be noted that the expected queuing issues along the Matthews-Mint Hill corridor at this intersection directly correlate with the poor operations at the intersection of US 74 and Matthews-Mint Hill Road as poor levels of service and maximum queues are present under 2022 Existing traffic conditions.

Due to the poor levels-of-service expected for the northbound minor-street approach upon phase 1 buildout, phase 2 buildout, and full buildout of the proposed development, a traffic signal was considered at this intersection under all future traffic conditions to achieve acceptable levels-of-service. With construction of the recommended improvements, this intersection is expected to operate at an overall LOS C or better during the peak hours under 2025/2026/2032 Build – Improved traffic conditions.

Table 10: Analysis Summary of Matthews-Mint Hill Road and Brigman Road

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2022 Existing Conditions	EBTR	-	0	402	-	-	N/A	N/A	0	1505	-	-	N/A	N/A
	WBLT	-	0	98	A	7.9	A (7.9)		18	370	B	10.3	B (10.3)	
	NBL	-	65	240	D	28.7	D (26.7)		100	946	F	80.5	E (41.5)	
	NBR	50'	3	67	B	10.0			35	150	C	16.6		
2025 No-Build Conditions	EBTR	-	0	159	-	-	N/A	N/A	0	1506	-	-	N/A	N/A
	WBLT	-	0	120	A	8.2	A (8.2)		25	454	B	11.8	B (11.8)	
	NBL	-	120	153	F	56.1	F (51.2)		200	946	F	346.5	F (149.2)	
	NBR	50'	3	63	B	10.7			55	150	C	23.4		
2025 Build Conditions	EBTR	-	0	1101	-	-	N/A	N/A	0	1509	-	-	N/A	N/A
	WBLT	-	0	260	A	8.4	A (8.4)		28	507	B	12.4	B (12.4)	
	NBL	-	153	538	F	85.3	F (77.2)		240	939	F	585.1	F (244.3)	
	NBR	50'	3	116	B	11.3			63	150	D	26.9		
2025 Build Conditions - Improved	EBTR	-	143	489	A	3.2	A (3.2)	B (13.8)	407	1495	A	6.3	A (6.3)	C (33.0)
	WBLT	-	86	205	A	5.3	A (5.3)		448	587	D	40.1	D (40.1)	
	NBL	-	239	276	F	84.4	F (82.1)		168	937	F	85.1	F (125.2)	
	NBR	**300'**	46	103	E	63.5			327	400	F	150.9		
2026 No-Build Conditions	EBTR	-	0	203	-	-	N/A	N/A	0	1503	-	-	N/A	N/A
	WBLT	-	0	119	A	8.2	A (8.2)		25	481	B	11.9	B (11.9)	
	NBL	-	125	182	F	60.0	F (54.7)		210	944	F	383.0	F (163.6)	
	NBR	50'	3	59	B	10.7			58	150	C	24.1		
2026 Build Conditions	EBTR	-	138	1062	A	3.1	A (3.1)	B (13.5)	398	1491	A	6.3	A (6.3)	D (44.8)
	WBLT	-	79	269	A	5.3	A (5.3)		556	781	E	65.7	E (65.7)	
	NBL	-	244	546	F	84.3	F (82.0)		186	936	F	97.6	F (147.6)	
	NBR	**300'**	45	202	E	63.1			373	377	F	179.4		
2026 Build Conditions - Improved	EBTR	-	164	770	A	4.3	A (4.3)	B (14.0)	646	1496	C	22.5	C (22.5)	C (28.7)
	WBL	**300'**	18	48	E	56.5	A (5.4)		111	220	D	49.7	B (15.5)	
	WBT	-	77	165	A	4.5			87	170	A	5.1		
	NBL	-	243	246	F	84.2	F (81.9)		171	270	E	77.6	F (94.6)	
	NBR	**300'**	45	144	E	63.1			296	303	F	105.4		
2032 No-Build Conditions	EBTR	-	0	470	-	-	N/A	N/A	0	1508	-	-	N/A	N/A
	WBLT	-	0	169	A	8.3	A (8.3)		30	530	B	12.8	B (12.8)	
	NBL	-	183	363	F	102	F (92.2)		270	945	F	686.5	F (284.4)	
	NBR	50'	3	87	B	11.0			78	150	D	29.5		
2032 Build Conditions	EBTR	-	377	906	A	9.3	A (9.3)	C (20.9)	1561	1496	E	67.0	E (67.0)	E (63.3)
	WBL	**300'**	64	120	E	67.2	B (12.2)		168	231	F	94.8	C (32.3)	
	WBT	-	94	184	A	7.4			63	186	A	5.5		
	NBL	-	287	656	F	89.1	F (84.1)		212	800	E	78.0	F (126.3)	
	NBR	**300'**	130	252	E	71.8			515	400	F	151		

2032 Build Conditions - Improved	EBT	-	147	122	A	9.0	A (9.0)	B (17.8)	164	210	B	11.3	B (11.3)	B (18.9)
	EBTR	-	147	126					164	242				
	WBL	**300'**	97	128	E	63.7	B (13.4)		283	308	E	57.1	C (20.6)	
	WBT	-	500	312	B	10.0			183	235	A	4.9		
	NBL	-	214	254	E	62.5	D (54.3)		155	193	E	61.3	D (40.4)	
	NBR	**300'**	82	139	C	34.3			198	240	C	29.8		
2037 Build Conditions	EBT		137	192	A	7.2	A (7.2)	B (17.2)	360	1510	B	13.2	B (13.2)	E (61.4)
	EBTR	-	137	162					360	1506				
	WBL	**300'**	59	111	E	57.7	A (9.6)		75	229	C	33.3	B (15.4)	
	WBT	-	109	160	A	6.5			73	35	A	7.7		
	NBL	-	274	428	E	78.0	E (68.4)		208	312	F	82.0	E (55.1)	
	NBR	**300'**	101	162	D	43.9			265	318	D	41.3		
2045 No-Build Conditions	EBL (2)	350'	13	47	D	44.0	C (27.8)	C (27.2)	27	310	E	62.3	B (19.6)	C (32.3)
	EBT	-	245	196	C	27.2			174	1133	B	17.4		
	EBTR	-	245	272					174	1176				
	WBL	325'	200	214	E	62.5	B (18.6)		163	371	E	79.6	C (28.6)	
	WBT	-	210	215	B	11.0			186	1450	C	21.7		
	WBTR	-	210	232					186	1430				
	NBL	200'	159	194	E	58.4	D (53.6)		264	277	E	68.7	E (66.0)	
	NBTR	-	64	117	D	39.8			42	198	D	42.9		
	SBL	-	64	99	E	56.9	E (58.7)		193	265	D	46.1	E (59.2)	
	SBTR	-	128	163	E	59.4			299	402	E	68.2		
2045 Build Conditions	EBL (2)	350'	35	76	D	52.9	C (29.3)	C (31.5)	56	450	E	62.8	D (36.0)	D (45.9)
	EBT	-	250	233	C	27.5			614	1472	C	33.6		
	EBTR	-	250	288					614	1481				
	WBL	325'	233	224	E	65.0	C (24.7)		254	414	F	99.7	D (35.3)	
	WBT	-	237	283	B	16.8			206	1449	C	23.2		
	WBTR	-	237	272					206	1428				
	NBL	200'	171	188	E	60.5	D (51.7)		317	258	F	85.9	E (74.2)	
	NBTR	-	109	129	D	38.7			113	258	D	45.3		
	SBL	-	65	82	E	58.5	E (59.6)		193	570	E	62.5	E (77.9)	
	SBTR	-	165	187	E	59.9			413	993	F	86.0		

8.6. Matthews-Mint Hill Road [EB-WB] and Moore Road / Northeast Parkway [NB-SB]

The existing signalized intersection of Matthews-Mint Hill Road and Moore Road / Northeast Parkway was analyzed under 2022 existing, 2025 no-build, 2025 build, 2026 build, 2032 build, 2037 build, and 2045 future traffic conditions with the lane configurations and traffic control shown in Table 11. Refer to Table 11 for a summary of the analysis results. Refer to Appendix K for the Synchro capacity analysis reports.

Capacity analysis indicates that the northbound and southbound approaches are expected to experience delays during the weekday AM and PM peak hours under all future traffic conditions. Overall operations are expected to operate at LOS D or better under existing and all future traffic conditions. No improvements are recommended by the developer.

Table 11: Analysis Summary of Matthews-Mint Hill Road and Moore Road / Northeast Parkway

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2022 Existing Conditions	EBL	200'	15	44	A	6.8	B (15.0)	C (21.2)	22	57	A	6.4	B (14.1)	B (14.4)
	EBT	-	103	118	B	15.6			104	118	B	15.1		
	EBTR	-	103	73					104	62				
	WBL	125'	28	98	A	6.6	B (19.9)		33	76	A	6.5	B (13.5)	
	WBTR	-	225	298	C	22.1			178	133	B	15.2		
	NBL	-	194	528	C	31.2	C (28.6)		68	104	B	17.0	B (16.6)	
	NBTR	150'	54	188	B	18.1			34	78	B	15.6		
	SBL	150'	13	32	B	16.8	B (19.8)		13	32	B	15.1	B (16.4)	
	SBT	-	10	26	C	24.0			9	30	C	21.0		
	SBR	250'	60	105	B	19.9			34	70	B	16.3		
2025 No-Build Conditions	EBL	200'	55	73	F	93.5	B (15.8)	D (48.2)	75	117	F	84.0	B (13.1)	C (32.0)
	EBT	-	78	117	A	9.6			50	93	A	4.5		
	EBTR	-	78	66					50	57				
	WBL	125'	139	225	F	99.4	C (33.3)		150	184	F	88.2	C (25.6)	
	WBTR	-	453	477	C	23.0			271	480	B	11.4		
	NBL	-	485	926	F	87.9	F (83.1)		202	525	F	83.0	F (81.0)	
	NBTR	150'	131	250	E	63.7			99	227	E	76.1		
	SBL	150'	37	46	F	89.1	F (96.6)		35	85	E	78.9	E (78.3)	
	SBT	-	20	545	F	87.8			18	315	E	77.5		
	SBR	250'	173	299	F	97.8			95	198	E	78.2		

2025 Build Conditions	EBL	200'	54	78	F	93.2	B (15.4)	D (47.7)	74	99	F	83.3	B (12.6)	C (31.2)
	EBT	-	76	106	A	9.4			49	92	A	4.4		
	EBTR	-	76	92					49	55				
	WBL	125'	139	225	F	99.4	C (33.2)		150	225	F	88.2	C (25.2)	
	WBTR	-	465	530	C	23.2			288	647	B	11.5		
	NBL	-	485	790	F	87.9	F (83.1)		202	944	F	83.0	F (81.0)	
	NBTR	150'	131	250	E	63.7			99	250	E	76.1		
	SBL	150'	37	45	F	89.1	F (96.6)		35	80	E	78.9	E (78.3)	
	SBT	-	20	647	F	87.8			18	734	E	77.5		
	SBR	250'	173	277	F	97.8			95	242	E	78.2		
2026 No-Build Conditions	EBL	200'	58	93	F	100.2	B (16.3)	D (50.4)	78	94	F	83.2	B (13.1)	C (32.1)
	EBT	-	81	125	A	9.8			52	97	A	4.6		
	EBTR	-	81	88					52	72				
	WBL	125'	145	225	F	105.4	C (34.5)		152	216	F	88.2	C (25.8)	
	WBTR	-	477	556	C	23.7			278	478	B	11.5		
	NBL	-	515	1033	F	92.1	F (87.1)		207	454	F	83.1	F (81.0)	
	NBTR	150'	139	250	E	66.8			99	195	E	75.8		
	SBL	150'	40	85	F	94.7	F (102.2)		37	89	E	79.1	E (78.4)	
	SBT	-	21	995	F	92.8			18	423	E	77.5		
	SBR	250'	182	320	F	103.5			96	237	E	78.3		
2026 Build Conditions	EBL	200'	49	65	F	81.1	B (14.5)	D (49.8)	82	99	F	90.5	B (13.3)	C (33.0)
	EBT	-	77	102	A	9.5			54	86	A	4.4		
	EBTR	-	77	92					54	57				
	WBL	125'	126	225	F	87.4	C (31.7)		161	220	F	94.1	C (26.2)	
	WBTR	-	457	664	C	23.4			302	614	B	11.5		
	NBL	-	443	1033	E	78.6	E (74.2)		218	739	F	88.9	F (86.6)	
	NBTR	150'	120	250	E	56.5			104	231	F	80.7		
	SBL	150'	35	36	E	79.1	F (84.9)		38	48	F	84.3	F (83.8)	
	SBT	-	18	991	E	77.5			20	510	F	82.5		
	SBR	250'	157	266	F	85.9			101	195	F	83.8		
2032 No-Build Conditions	EBL	200'	60	79	F	96.4	B (17.2)	D (51.2)	85	96	F	88.2	B (14.0)	C (34.4)
	EBT	-	88	116	B	10.9			57	84	A	4.9		
	EBTR	-	88	89					57	72				
	WBL	125'	156	224	F	105.7	D (37.8)		172	225	B	94.1	C (27.7)	
	WBTR	-	557	760	C	27.4			319	738	B	12.3		
	NBL	-	556	1036	F	90.3	F (85.0)		232	862	F	88.9	F (86.3)	
	NBTR	150'	143	250	E	63.6			112	224	F	80.2		
	SBL	150'	41	43	F	95.8	F (102.4)		42	112	F	84.5	F (84.3)	
	SBT	-	21	991	F	92.8			20	692	F	82.5		
	SBR	250'	196	350	F	103.4			109	243	F	84.4		
2032 Build Conditions	EBL	200'	55	69	F	87.7	B (15.4)	D (46.0)	85	98	F	87.1	B (12.5)	C (32.3)
	EBT	-	87	133	B	10.0			58	90	A	4.4		
	EBTR	-	87	80					58	68				
	WBL	125'	141	225	F	93.8	D (36.0)		172	225	F	94.1	C (26.6)	
	WBTR	-	594	978	C	27.8			368	1080	B	12.8		
	NBL	-	504	1043	F	82.1	E (77.2)		232	984	F	89.0	F (86.4)	
	NBTR	150'	131	250	E	57.3			112	250	F	80.3		
	SBL	150'	37	40	F	85.1	F (90.3)		42	91	F	84.5	F (84.3)	
	SBT	-	20	986	F	82.5			20	919	F	82.5		
	SBR	250'	176	292	F	91.2			109	243	F	84.4		

2037 Build Conditions	EBL	200'	54	77	E	79.6	B (16.2)	D (43.4)	67	93	E	74.0	B (11.0)	C (29.4)
	EBT	-	98	139	B	11.5			46	202	A	4.1		
	EBTR	-	98	122					46	155				
	WBL	125'	140	225	F	86.4	D (36.7)		164	225	F	82.7	C (26.2)	
	WBTR	-	600	943	C	29.6			403	1182	B	14.5		
	NBL	-	485	1044	E	72.8	E (68.1)		223	242	E	77.3	E (75.2)	
	NBTR	150'	123	250	D	49.2			107	176	E	70.1		
	SBL	150'	36	75	E	74.6	F (82.5)		40	97	E	74.0	E (73.4)	
	SBT	-	18	994	E	72.2			18	100	E	72.2		
	SBR	250'	175	339	F	83.8			102	223	E	73.3		
2045 No-Build Conditions	EBL	200'	86	104	F	80.8	B (18.8)	D (37.1)	124	120	E	74.6	B (14.3)	C (31.3)
	EBT	-	123	119	B	10.1			66	115	A	5.2		
	EBTR	-	123	85					66	146				
	WBL	125'	194	225	E	62.2	D (37.0)		149	224	E	61.6	C (31.4)	
	WBTR	-	356	317	C	25.7			338	1122	C	22.8		
	NBL	-	420	527	D	52.5	D (48.7)		181	590	D	46.4	D (53.4)	
	NBTR	150'	104	250	C	33.7			181	249	E	60.4		
	SBL	150'	39	59	D	54.6	D (52.3)		46	115	E	55.5	E (57.1)	
	SBT	-	15	34	D	52.0			23	528	D	51.8		
	SBR	250'	62	94	D	51.4			172	333	E	57.6		
2045 Build Conditions	EBL	200'	75	97	E	79.7	B (19.6)	D (37.2)	119	123	E	67.7	B (16.0)	C (31.7)
	EBT	-	141	97	B	11.8			107	119	A	8.8		
	EBTR	-	141	99					107	152				
	WBL	125'	194	224	E	62.2	D (36.6)		149	224	E	61.6	C (30.8)	
	WBTR	-	394	342	C	26.2			372	1141	C	22.9		
	NBL	-	426	477	D	53.4	D (49.5)		183	915	D	46.8	D (54.5)	
	NBTR	150'	105	250	C	34.0			185	250	E	62.2		
	SBL	150'	39	75	D	54.6	D (52.3)		46	71	E	55.5	E (59.0)	
	SBT	-	15	30	D	52.0			24	937	D	52.2		
	SBR	250'	62	105	D	51.4			174	350	E	59.9		

8.7. Sports Parkway [NB-SB] and Brigman Road [EB-WB]

The existing unsignalized intersection of Sports Parkway and Brigman Road was analyzed under 2022 existing, 2025/2026/2032/2045 no-build, and 2025/2026/2032/2037/2045 build traffic conditions with the lane configurations and traffic control shown in Table 12. Refer to Table 12 for a summary of the analysis results. Refer to Appendix L for the Synchro capacity analysis reports.

Capacity analysis of 2022 existing, 2025/2026/2032 no-build, and 2025/2026 build traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS C or better during the weekday AM and PM peak hours. Significant queueing is expected on the northbound approach; however, this is directly related to the spillback at the intersection of US 74 and Matthews Mint-Hill road spilling back through the roadway network.

Under 2032 build and 2037 build traffic conditions, the major-street left-turn movements are expected to operate at LOS A during the weekday AM and PM peak hours and the minor-street approaches are expected to operate at LOS C or better, with the exception of the northbound minor-street approach during the weekday PM peak hours (LOS F). These levels-of-service are not uncommon for stop-controlled minor-street approaches with heavy left-turn volumes. Significant queueing is expected on the northbound approach; however, this is directly related to the spillback at the intersection of US 74 and Matthews Mint-Hill road spilling back through the roadway network.

Due to the poor levels-of-service expected for the northbound minor-street approach upon buildout of the proposed development, a traffic signal was considered at this intersection under 2032 build traffic conditions to achieve acceptable levels-of-service. Weekday AM and PM peak hour traffic volumes were utilized in evaluating the potential need for signalization based on the peak hour warrant (warrant 3) from the MUTCD. Based on a review of signal warrants at this intersection, the peak hour warrant is not expected to be met for either the weekday AM or PM peak hours under 2032 build traffic conditions. As a result, it is not expected that this intersection would satisfy the MUTCD 8-hour (warrant 1) or 4-hour

(warrant 2) warrants, which NCDOT favors for installation of a traffic signal. Therefore, signalization is not recommended at this intersection. Refer to Appendix BB for the signal warrant analysis calculations.

Table 12: Analysis Summary of Sports Parkway and Brigman Road

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2022 Existing Conditions	EBLTR	-	0	17	A	7.6	A (7.6)	N/A	3	34	A	7.5	A (7.5)	N/A
	WBLTR	-	0	6	A	7.3	A (7.3)		5	1000	A	7.9	A (7.9)	
	NBL	150'	0	34	B	10.1	A (9.8)		33	249	C	17.9	C (16.3)	
	NBTR	-	0	28	A	9.4			5	2204	B	11.6		
	SBLTR	-	3	30	A	9.9	A (9.9)		3	123	B	12.9	B (12.9)	
2025 No-Build Conditions	EBLTR	-	0	23	A	7.6	A (7.6)	N/A	3	46	A	7.6	A (7.6)	N/A
	WBLTR	-	0	6	A	7.3	A (7.3)		5	984	A	8.0	A (8.0)	
	NBL	150'	0	33	B	10.1	A (9.8)		35	243	C	19.2	C (17.3)	
	NBTR	-	0	28	A	9.5			5	2356	B	11.8		
	SBLTR	-	3	30	B	10.0	B (10.0)		3	190	B	13.3	B (13.3)	
2025 Build Conditions	EBLTR	-	0	11	A	7.6	A (7.6)	N/A	3	52	A	7.6	A (7.6)	N/A
	WBLTR	-	0	177	A	7.3	A (7.3)		5	1003	A	8.0	A (8.0)	
	NBL	150'	0	30	B	10.1	A (9.8)		35	249	C	19.2	C (17.3)	
	NBTR	-	0	28	A	9.5			5	2690	B	11.8		
	SBLTR	-	3	34	B	10.0	B (10.0)		3	84	B	13.3	B (13.3)	
2026 No-Build Conditions	EBLTR	-	0	11	A	7.6	A (7.6)	N/A	3	58	A	7.6	A (7.6)	N/A
	WBLTR	-	0	21	A	7.3	A (7.3)		5	898	A	8.0	A (8.0)	
	NBL	150'	0	34	B	10.1	A (9.8)		38	249	C	19.6	C (17.7)	
	NBTR	-	0	28	A	9.5			5	2233	B	11.9		
	SBLTR	-	3	30	B	10.0	B (10.0)		3	133	B	13.3	B (13.3)	
2026 Build Conditions	EBLTR	-	0	18	A	7.6	A (7.6)	N/A	3	32	A	7.6	A (7.6)	N/A
	WBLTR	-	0	23	A	7.3	A (7.3)		5	999	A	8.0	A (8.0)	
	NBL	150'	0	37	B	10.1	A (9.8)		38	242	C	19.6	C (17.7)	
	NBTR	-	0	26	A	9.5			5	3157	B	11.9		
	SBLTR	-	3	30	B	10.0	B (10.0)		3	195	B	13.3	B (13.3)	
2032 No-Build Conditions	EBLTR	-	0	33	A	7.6	A (7.6)	N/A	5	46	A	7.6	A (7.6)	N/A
	WBLTR	-	0	12	A	7.3	A (7.3)		5	991	A	8.1	A (8.1)	
	NBL	150'	0	30	B	10.4	B (10.0)		48	249	C	23.0	C (20.3)	
	NBTR	-	0	28	A	9.6			8	2835	B	12.3		
	SBLTR	-	3	30	B	10.1	B (10.1)		5	113	B	14.3	B (14.3)	
2032 Build Conditions	EBLTR	-	0	38	A	7.6	A (7.6)	N/A	5	79	A	7.6	A (7.6)	N/A
	WBLTR	-	0	609	A	7.4	A (7.4)		5	111	A	8.4	A (8.4)	
	NBL	150'	10	171	B	11.4	B (11.2)		175	168	F	61.8	F (50.6)	
	NBTR	-	3	376	B	10.7			18	219	C	15.7		
	SBLTR	-	5	155	B	11.0	B (11.0)		18	60	C	19.9	C (19.9)	

2037 Build Conditions	EBLTR	-	0	48	A	7.7	A (7.7)	N/A	5	91	A	7.6	A (7.6)	N/A
	WBLTR	-	0	54	A	7.4	A (7.4)		5	95	A	8.5	A (8.5)	
	NBL	150'	10	68	B	11.7	B (11.5)		228	162	F	93.1	F (74.3)	
	NBTR	-	5	44	B	10.9			20	54	C	16.7		
	SBLTR	-	5	39	B	11.2	B (11.2)		20	60	C	21.7	C (21.7)	
2045 No-Build Conditions	EBLTR	-	23	130	A	8.1	A (8.1)	N/A	23	922	A	8.1	A (8.1)	N/A
	WBLTR	-	5	24	A	8.0	A (8.0)		5	75	A	8.3	A (8.3)	
	NBL	150'	0	28	N/A	N/A	N/A		0	250	N/A	N/A	N/A	
	NBTR	-	78	48	E	42.1			143	1032	F	80.8		
	SBL	-	5	27	F	54.0	F (411.9)		10	31	F	98.3	F (651.1)	
	SBTR	-	448	273	F	420.1			573	259	F	663		
2045 Build Conditions	EBLTR	-	10	91	A	7.9	A (7.9)	N/A	23	922	A	8.1	A (8.1)	N/A
	WBLTR	-	0	22	A	7.7	A (7.7)		5	83	A	8.3	A (8.3)	
	NBL	150'	0	59	N/A	N/A	N/A		0	250	N/A	N/A	N/A	
	NBTR	-	20	58	C	18.0			143	703	F	80.8		
	SBL	-	0	27	C	18.3	F (244.6)		10	31	F	98.3	F (651.1)	
	SBTR	-	593	453	F	246.9			573	299	F	663		

8.8. Sports Parkway [NB-SB] and Tank Town Road [EB-WB]

The existing unsignalized intersection of Sports Parkway and Tank Town Road was analyzed under 2022 existing, 2025 no-build, 2025 build, 2026 build, 2032 build, 2037 future, and 2045 future traffic conditions with the lane configurations and traffic control shown in Table 13. Refer to Table 13 for a summary of the analysis results. Refer to Appendix M for the Synchro capacity analysis reports.

Capacity analysis of 2025 build, 2026 build, 2032 build, 2037 future, and 2045 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS B or better during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Table 13: Analysis Summary of Sports Parkway and Tank Town Road

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2022 Existing Conditions	EBLTR	-	0	0	A	7.2	A (7.2)	N/A	10	20	A	7.5	A (7.5)	N/A
	WBLTR	-	0	0	A	7.2	A (7.2)		0	6	A	7.2	A (7.2)	
	NBLTR	-	0	35	A	8.8	A (8.8)		3	31	B	11.6	B (11.6)	
	SBLTR	-	0	36	A	8.8	A (8.8)		8	62	A	9.1	A (9.1)	
2025 No-Build Conditions	EBLTR	-	0	0	A	7.2	A (7.2)	N/A	10	42	A	7.5	A (7.5)	N/A
	WBLTR	-	0	0	A	7.2	A (7.2)		0	0	A	7.2	A (7.2)	
	NBLTR	-	0	31	A	8.8	A (8.8)		3	31	B	11.8	B (11.8)	
	SBLTR	-	0	41	A	8.8	A (8.8)		10	74	A	9.2	A (9.2)	
2025 Build Conditions	EBLTR	-	0	6	A	7.2	A (7.2)	N/A	10	54	A	7.5	A (7.5)	N/A
	WBLTR	-	0	0	A	7.2	A (7.2)		0	0	A	7.2	A (7.2)	
	NBLTR	-	0	31	A	8.8	A (8.8)		3	31	B	11.8	B (11.8)	
	SBLTR	-	0	40	A	8.8	A (8.8)		10	68	A	9.2	A (9.2)	
2026 No-Build Conditions	EBLTR	-	0	6	A	7.2	A (7.2)	N/A	10	36	A	7.5	A (7.5)	N/A
	WBLTR	-	0	6	A	7.2	A (7.2)		0	0	A	7.2	A (7.2)	
	NBLTR	-	0	31	A	8.8	A (8.8)		3	40	B	11.8	B (11.8)	
	SBLTR	-	0	35	A	8.8	A (8.8)		10	68	A	9.2	A (9.2)	
2026 Build Conditions	EBLTR	-	0	0	A	7.2	A (7.2)	N/A	10	28	A	7.5	A (7.5)	N/A
	WBLTR	-	0	0	A	7.2	A (7.2)		0	6	A	7.2	A (7.2)	
	NBLTR	-	0	36	A	8.8	A (8.8)		3	35	B	11.8	B (11.8)	
	SBLTR	-	0	36	A	8.8	A (8.8)		10	64	A	9.2	A (9.2)	

2032 No-Build Conditions	EBLTR	-	0	0	A	7.2	A (7.2)	N/A	13	32	A	7.6	A (7.6)	N/A
	WBLTR	-	0	0	A	7.2	A (7.2)		0	0	A	7.2	A (7.2)	
	NBLTR	-	0	36	A	8.8	A (8.8)		3	31	B	12.4	B (12.4)	
	SBLTR	-	0	40	A	8.9	A (8.9)		10	69	A	9.2	A (9.2)	
2032 Build Conditions	EBLTR	-	0	6	A	7.3	A (7.3)	N/A	13	40	A	7.6	A (7.6)	N/A
	WBLTR	-	0	0	A	7.2	A (7.2)		0	0	A	7.2	A (7.2)	
	NBLTR	-	0	31	A	9.1	A (9.1)		3	31	B	13.3	B (13.3)	
	SBLTR	-	3	49	A	8.7	A (8.7)		13	62	A	9.3	A (9.3)	
2037 Build Conditions	EBLTR	-	0	11	A	7.3	A (7.3)	N/A	15	42	A	7.7	A (7.7)	N/A
	WBLTR	-	0	0	A	7.2	A (7.2)		0	6	A	7.2	A (7.2)	
	NBLTR	-	0	36	A	9.1	A (9.1)		3	36	B	13.8	B (13.8)	
	SBLTR	-	3	55	A	8.7	A (8.7)		15	72	A	9.4	A (9.4)	
2045 No-Build Conditions	EBLTR	-	0	0	A	7.3	A (7.3)	N/A	10	33	A	7.5	A (7.5)	N/A
	WBLTR	-	0	0	A	7.3	A (7.3)		0	0	A	7.2	A (7.2)	
	NBLTR	-	0	31	A	9.0	A (9.0)		3	31	B	11.5	B (11.5)	
	SBLTR	-	0	31	A	9.0	A (9.0)		8	66	A	9.1	A (9.1)	
2045 Build Conditions	EBLTR	-	0	0	A	7.3	A (7.3)	N/A	13	33	A	7.6	A (7.6)	N/A
	WBLTR	-	0	6	A	7.3	A (7.3)		0	0	A	7.2	A (7.2)	
	NBLTR	-	0	31	A	9.2	A (9.2)		3	36	B	12.1	B (12.1)	
	SBLTR	-	3	41	A	8.8	A (8.8)		10	68	A	9.2	A (9.2)	

8.9. IPP Extension [NB-SB] and Site Access 1 [EB-WB]

The proposed unsignalized intersection of IPP Extension and Site Access 1 was analyzed under 2025 build, 2026 build, 2032 build, and 2037 future traffic conditions with the lane configurations and traffic control shown in Table 14. Refer to Table 14 for a summary of the analysis results. Refer to Appendix N for the Synchro capacity analysis reports.

Capacity analysis of 2025 build, 2026 build, 2032 build, and 2037 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS D or better during the weekday AM and PM peak hours except for the eastbound approach during the PM peak hour which operates at LOS E under 2026 build traffic conditions and LOS F under 2032 build and 2037 build traffic conditions. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

It should be noted that exclusive northbound and southbound left-turn lanes with 100 feet of full width storage are expected to be installed by the Matthews Park Development at this intersection. The potential need for extension of these existing left-turn lanes or construction of exclusive right-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*. Based on the low expected turning movement volumes into the site, exclusive right-turn lanes are not warranted at this intersection. The existing left-turn lanes are expected to be sufficient to accommodate the future development traffic at this intersection based on the queueing analysis results. Refer to Appendix DD for a copy of the turn lane warrants.

Table 14: Analysis Summary of IPP Extension and Site Access 1

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2025 No-Build Conditions	EBLTR	-	3	45	A	9.6	A (9.6)	N/A	20	76	B	11.8	B (11.8)	N/A
	WBLTR	-	3	48	A	9.1	A (9.1)		8	58	A	9.3	A (9.3)	
	NBL	100'	0	6	A	7.3	A (7.3)		0	0	A	7.3	A (7.3)	
	NBTR	-	0	0	-	-			0	0	-			
	SBL	100'	3	6	A	7.3	A (7.3)		3	22	A	7.4	A (7.4)	
	SBTR	-	0	4	-	-			0	0	-			
2025 Build Conditions	EBLTR	-	8	47	B	12.3	B (12.3)	N/A	68	225	D	25.2	D (25.2)	N/A
	WBLTR	-	15	22	A	9.4	A (9.4)		18	128	B	10.2	B (10.2)	
	NBL	100'	0	6	A	7.4	A (7.4)		0	0	A	7.5	A (7.5)	
	NBTR	-	0	0	-	-			0	24	-	-		
	SBL	100'	5	33	A	7.4	A (7.4)		10	33	A	7.6	A (7.6)	
	SBTR	-	0	0	-	-			0	0	-	-		
2026 No-Build Conditions	EBLTR	-	3	40	A	9.6	A (9.6)	N/A	20	68	B	11.8	B (11.8)	N/A
	WBLTR	-	3	41	A	9.1	A (9.1)		8	55	A	9.3	A (9.3)	
	NBL	100'	0	11	A	7.3	A (7.3)		0	11	A	7.3	A (7.3)	
	NBTR	-	0	0	-	-			0	0	-	-		
	SBL	100'	3	20	A	7.3	A (7.3)		3	32	A	7.4	A (7.4)	
	SBTR	-	0	4	-	-			0	0	-	-		
2026 Build Conditions	EBLTR	-	10	58	B	13.5	B (13.5)	N/A	100	89	E	37.5	E (37.5)	N/A
	WBLTR	-	15	82	B	10.0	B (10.0)		20	79	B	10.9	B (10.9)	
	NBL	100'	0	17	A	7.4	A (7.4)		0	28	A	7.6	A (7.6)	
	NBTR	-	0	0	-	-			0	0	-	-		
	SBL	100'	5	34	A	7.6	A (7.6)		10	57	A	7.7	A (7.7)	
	SBTR	-	0	9	-	-			0	4	-	-		
2026 Build Conditions *(Greylock)*	EBLTR	-	8	58	B	13.0	B (13.0)	N/A	85	145	D	31.7	D (31.7)	N/A
	WBLTR	-	15	58	A	9.9	A (9.9)		20	97	B	11.1	B (11.1)	
	NBL	100'	0	12	A	7.4	A (7.4)		0	17	A	7.6	A (7.6)	
	NBTR	-	0	0	-	-			0	14	-	-		
	SBL	100'	5	43	A	7.5	A (7.5)		10	51	A	7.7	A (7.7)	
	SBTR	-	0	0	-	-			0	0	-	-		
2032 No-Build Conditions	EBLTR	-	3	49	A	9.6	A (9.6)	N/A	20	69	B	11.8	B (11.8)	N/A
	WBLTR	-	3	44	A	9.1	A (9.1)		8	62	A	9.3	A (9.3)	
	NBL	100'	0	12	A	7.3	A (7.3)		0	11	A	7.3	A (7.3)	
	NBTR	-	0	0	-	-			0	0	-	-		
	SBL	100'	3	12	A	7.3	A (7.3)		3	17	A	7.4	A (7.4)	
	SBTR	-	0	0	-	-			0	0	-	-		
2032 Build Conditions	EBLTR	-	10	58	C	17.3	C (17.3)	N/A	158	145	F	80.1	F (80.1)	N/A
	WBLTR	-	15	62	B	11.4	B (11.4)		23	96	B	13.7	B (13.7)	
	NBL	100'	0	29	A	7.8	A (7.8)		0	23	A	8.0	A (8.0)	
	NBTR	-	0	0	-	-			0	59	-	-		
	SBL	100'	5	44	A	7.9	A (7.9)		10	57	A	8.2	A (8.2)	
	SBTR	-	0	0	-	-			0	0	-	-		

2032 Build Conditions *(Greylock)*	EBLTR	-	10	56	C	16.2	C (16.2)	N/A	128	98	F	57.4	F (57.4)	N/A
	WBLTR	-	13	68	B	11.1	B (11.1)		23	88	B	12.9	B (12.9)	
	NBL	100'	0	24	A	7.7	A (7.7)		0	18	A	7.9	A (7.9)	
	NBTR	-	0	0	-	-			0	6	-	-		
	SBL	100'	5	34	A	7.8	A (7.8)		10	59	A	8.1	A (8.1)	
	SBTR	-	0	0	-	-			0	0	-	-		
2037 Build Conditions	EBLTR	-	10	63	C	17.3	C (17.3)	N/A	158	218	F	80.1	F (80.1)	N/A
	WBLTR	-	15	69	B	11.4	B (11.4)		23	149	B	13.7	B (13.7)	
	NBL	100'	0	12	A	7.8	A (7.8)		0	18	A	8.0	A (8.0)	
	NBTR	-	0	0	-	-			0	194	-	-		
	SBL	100'	10	46	A	7.9	A (7.9)		10	56	A	8.2	A (8.2)	
	SBTR	-	0	0	-	-			0	36	-	-		
2037 Build Conditions *(Greylock)*	EBLTR	-	10	60	C	16.2	C (16.2)	N/A	128	286	F	57.4	F (57.4)	N/A
	WBLTR	-	13	72	B	11.1	B (11.1)		23	222	B	12.9	B (12.9)	
	NBL	100'	0	22	A	7.7	A (7.7)		0	85	A	7.9	A (7.9)	
	NBTR	-	0	0	-	-			0	198	-	-		
	SBL	100'	5	43	A	7.8	A (7.8)		10	50	A	8.1	A (8.1)	
	SBTR	-	0	4	-	-			0	0	-	-		

8.10. IPP Extension [NB-SB] and Public Road A [EB-WB]

The proposed unsignalized intersection of IPP Extension and Public Road A was analyzed under 2025 build, 2026 build, 2032 build, and 2037 future traffic conditions with the lane configurations and traffic control shown in Table 15. Refer to Table 15 for a summary of the analysis results. Refer to Appendix O for the Synchro capacity analysis reports.

Capacity analysis of 2025 build, 2026 build, 2032 build, and 2037 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS C or better during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 15: Analysis Summary of IPP Extension and Public Road A

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2025 Build Conditions	EBLTR	-	0	31	A	9.0	A (9.0)	N/A	3	41	A	9.4	A (9.4)	N/A
	WBLTR	-	3	31	A	8.8	A (8.8)		3	30	A	9.0	A (9.0)	
	NBLTR	-	0	0	A	7.3	A (7.3)		0	16	A	7.3	A (7.3)	
	SBLTR	-	0	0	A	7.3	A (7.3)		0	16	A	7.3	A (7.3)	
2026 Build Conditions	EBLTR	-	5	59	A	9.8	A (9.8)	N/A	5	53	B	10.2	B (10.2)	N/A
	WBLTR	-	3	55	A	9.0	A (9.0)		3	31	A	9.1	A (9.1)	
	NBLTR	-	0	0	A	7.3	A (7.3)		0	11	A	7.4	A (7.4)	
	SBLTR	-	0	17	A	7.3	A (7.3)		3	16	A	7.4	A (7.4)	
2026 Build Conditions *(Greylock)*	EBLTR	-	5	50	A	9.6	A (9.6)	N/A	5	45	B	10.1	B (10.1)	N/A
	WBLTR	-	3	49	A	8.9	A (8.9)		3	36	A	9.1	A (9.1)	
	NBLTR	-	0	0	A	7.3	A (7.3)		0	16	A	7.4	A (7.4)	
	SBLTR	-	0	6	A	7.3	A (7.3)		3	17	A	7.4	A (7.4)	

2032 Build Conditions	EBLTR	-	10	52	B	12.6	B (12.6)	N/A	38	80	C	17.3	C (17.3)	N/A
	WBLTR	-	10	58	B	10.6	B (10.6)		10	58	B	11.6	B (11.6)	
	NBLTR	-	0	24	A	7.6	A (7.6)		0	26	A	7.8	A (7.8)	
	SBLTR	-	0	32	A	7.6	A (7.6)		3	33	A	7.6	A (7.6)	
2032 Build Conditions *(Greylock)*	EBLTR	-	10	63	B	11.9	B (11.9)	N/A	30	77	C	15.4	C (15.4)	N/A
	WBLTR	-	10	65	B	10.4	B (10.4)		10	54	B	11.3	B (11.3)	
	NBLTR	-	0	0	A	7.6	A (7.6)		0	12	A	7.7	A (7.7)	
	SBLTR	-	0	42	A	7.5	A (7.5)		3	38	A	7.6	A (7.6)	
2037 Build Conditions	EBLTR	-	10	56	B	12.6	B (12.6)	N/A	38	94	C	17.3	C (17.3)	N/A
	WBLTR	-	10	54	B	10.6	B (10.6)		10	57	B	11.6	B (11.6)	
	NBLTR	-	0	31	A	7.6	A (7.6)		0	28	A	7.8	A (7.8)	
	SBLTR	-	0	63	A	7.6	A (7.6)		3	34	A	7.6	A (7.6)	
2037 Build Conditions *(Greylock)*	EBLTR	-	10	53	B	11.9	B (11.9)	N/A	30	78	C	15.4	C (15.4)	N/A
	WBLTR	-	10	59	B	10.4	B (10.4)		10	63	B	11.3	B (11.3)	
	NBLTR	-	0	12	A	7.6	A (7.6)		0	27	A	7.7	A (7.7)	
	SBLTR	-	0	32	A	7.5	A (7.5)		3	50	A	7.6	A (7.6)	

8.11. Public Road A [EB-WB] and Site Access 2 [SB]

The proposed unsignalized intersection of Public Road A and Site Access 2 was analyzed under 2025 build, 2026 build, 2032 build, and 2037 future traffic conditions with lane configurations and traffic control shown in Table 16. Refer to Appendix P for the Synchro capacity analysis reports.

Capacity analysis of 2025 build, 2026 build, 2032 build, and 2037 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 16: Analysis Summary of Public Road A and Site Access 2

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2025 Build Conditions	EBLT	-	0	0	A	7.3	A (7.3)	N/A	0	6	A	7.2	A (7.2)	N/A
	WBTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	0	31	A	8.6	A (8.6)		0	35	A	8.5	A (8.5)	
2026 Build Conditions	EBLT	-	0	0	A	7.3	A (7.3)	N/A	0	6	A	7.3	A (7.3)	N/A
	WBTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	0	31	A	8.6	A (8.6)		0	32	A	8.6	A (8.6)	
2032 Build Conditions	EBLT	-	0	18	A	7.4	A (7.4)	N/A	0	0	A	7.4	A (7.4)	N/A
	WBTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	0	31	A	9.0	A (9.0)		3	32	A	9.3	A (9.3)	
2037 Build Conditions	EBLT	-	0	6	A	7.4	A (7.4)	N/A	0	6	A	7.4	A (7.4)	N/A
	WBTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	0	36	A	9.0	A (9.0)		3	32	A	9.3	A (9.3)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.12. Public Road A [EB-WB] and Site Access 3 [SB]

The proposed unsignalized intersection of Public Road A and Site Access 3 was analyzed under 2025 build, 2026 build, 2032 build, 2037 build, and 2045 future traffic conditions with lane configurations and traffic control shown in Table 17. Refer to Table 17 for a summary of the analysis results. Refer to Appendix Q for the Synchro capacity analysis reports.

Capacity analysis of 2025 build, 2026 build, 2032 build, and 2037 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 17: Analysis Summary of Public Road A and Site Access 3

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2025 Build Conditions	EBLT	-	0	0	A	7.2	A (7.2)	N/A	0	0	A	7.2	A (7.2)	N/A
	WBTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	0	31	A	8.5	A (8.5)		0	30	A	8.5	A (8.5)	
2026 Build Conditions	EBLT	-	0	6	A	7.2	A (7.2)	N/A	0	0	A	7.2	A (7.2)	N/A
	WBTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	0	35	A	8.5	A (8.5)		0	31	A	8.5	A (8.5)	
2032 Build Conditions	EBLT	-	0	0	A	7.4	A (7.4)	N/A	0	6	A	7.4	A (7.4)	N/A
	WBTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	5	59	A	9.2	A (9.2)		3	31	A	9.4	A (9.4)	
2037 Build Conditions	EBLT	-	0	6	A	7.4	A (7.4)	N/A	0	19	A	7.4	A (7.4)	N/A
	WBTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	5	62	A	9.2	A (9.2)		3	36	A	9.4	A (9.4)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.13. Public Road A [EB-WB] and Site Access 4 [SB]

The proposed unsignalized intersection of Public Road A and Site Access 4 was analyzed under 2025 build, 2026 build, 2032 build and 2037 future traffic conditions with the lane configurations and traffic control shown in Table 18. Refer to Table 18 for a summary of the analysis results. Refer to Appendix R for the Synchro capacity analysis reports.

Capacity analysis of 2025 build, 2026 build, 2032 build, and 2037 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS B or better during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 18: Analysis Summary of Public Road A and Site Access 4

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2025 Build Conditions	EBLTR	-	0	0	A	7.2	A (7.2)	N/A	0	0	A	7.3	A (7.3)	N/A
	WBLTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLTR	-	0	30	A	8.5	A (8.5)		0	30	A	8.6	A (8.6)	
2026 Build Conditions	EBLTR	-	0	0	A	7.3	A (7.3)	N/A	0	0	A	7.3	A (7.3)	N/A
	WBLTR	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLTR	-	0	30	A	8.6	A (8.6)		0	35	A	8.8	A (8.8)	
2032 Build Conditions	EBLTR	-	0	35	A	7.3	A (7.3)	N/A	0	6	A	7.3	A (7.3)	N/A
	WBLTR	-	5	48	A	7.4	A (7.4)		5	30	A	7.4	A (7.4)	
	NBLTR	-	3	0	A	9.1	A (9.1)		10	69	A	9.0	A (9.0)	
	SBLTR	-	3	40	B	10.0	B (10.0)		3	31	B	10.8	B (10.8)	
2037 Build Conditions	EBLTR	-	0	6	A	7.3	A (7.3)	N/A	0	6	A	7.3	A (7.3)	N/A
	WBLTR	-	5	41	A	7.4	A (7.4)		5	18	A	7.4	A (7.4)	
	NBLTR	-	3	40	A	9.1	A (9.1)		10	68	A	9.0	A (9.0)	
	SBLTR	-	3	38	B	10.0	B (10.0)		3	35	B	10.8	B (10.8)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.14. Public Road A [EB-WB] and Site Access 5 [NB]

The proposed unsignalized intersection of Public Road A and Site Access 5 was analyzed under 2026 build, 2032 build, 2037 build, and 2045 future traffic conditions with lane configurations and traffic control shown in Table 19. Refer to Table 19 for a summary of the analysis results. Refer to Appendix S for the Synchro capacity analysis reports.

Capacity analysis of 2026 build, 2032 build, and 2037 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 19: Analysis Summary of Public Road A and Site Access 5

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2026 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	6	6	A	7.3	A (7.3)		0	0	A	7.3	A (7.3)	
	NBLR	-	31	36	A	8.5	A (8.5)		0	31	A	8.6	A (8.6)	
2032 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	0	6	A	7.3	A (7.3)		0	0	A	7.3	A (7.3)	
	NBLR	-	3	36	A	8.5	A (8.5)		0	31	A	8.5	A (8.5)	
2037 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	0	0	A	7.3	A (7.3)		0	0	A	7.3	A (7.3)	
	NBLR	-	3	36	A	8.5	A (8.5)		0	31	A	8.5	A (8.5)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.15. Public Road A [EB-WB] and Site Access 6 [NB]

The proposed unsignalized intersection of Public Road A and Site Access 6 was analyzed under 2026 build, 2032 build, 2037 build, and 2045 future traffic conditions with lane configurations and traffic control shown in Table 20. Refer to Table 20 for a summary of the analysis results. Refer to Appendix T for the Synchro capacity analysis reports.

Capacity analysis of 2026 build, 2032 build, and 2037 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 20: Analysis Summary of Public Road A and Site Access 6

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2026 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	0	0	A	7.2	A (7.2)		0	0	A	7.3	A (7.3)	
	NBLR	-	3	40	A	8.5	A (8.5)		0	36	A	8.5	A (8.5)	
2032 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	0	6	A	7.2	A (7.2)		0	0	A	7.2	A (7.2)	
	NBLR	-	3	36	A	8.5	A (8.5)		0	31	A	8.5	A (8.5)	
2037 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	0	0	A	7.2	A (7.2)		0	0	A	7.2	A (7.2)	
	NBLR	-	3	36	A	8.5	A (8.5)		0	31	A	8.5	A (8.5)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.16. Public Road A and Site Access 7

The proposed unsignalized intersection of Public Road A and Site Access 7 was analyzed under 2026 build, 2032 build, and 2037 future traffic conditions with the lane configurations and traffic control shown in Table 21. Refer to Table 21 for a summary of the analysis results. Refer to Appendix U for the Synchro capacity analysis reports.

Capacity analysis of 2026 build, 2032 build, and 2037 future traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 21: Analysis Summary of Public Road A and Site Access 7

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2026 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	0	0	A	7.2	A (7.2)		0	0	A	7.3	A (7.3)	
	NBLR	-	3	36	A	8.7	A (8.7)		0	31	A	8.6	A (8.6)	
2032 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	0	19	A	7.3	A (7.3)		0	25	A	7.5	A (7.5)	
	NBLR	-	5	64	A	9.0	A (9.0)		3	45	A	9.4	A (9.4)	
2037 Build Conditions	EBT**R**	-	0	0	-	-	N/A	N/A	0	0	-	-	N/A	N/A
	WB**L**T	-	0	0	A	7.3	A (7.3)		0	24	A	7.5	A (7.5)	
	NBLR	-	5	61	A	9.0	A (9.0)		3	45	A	9.4	A (9.4)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.17. IPP Extension and Site Access 8

The proposed unsignalized intersection of IPP Extension and Site Access 8 was analyzed under 2032 build and 2037 future traffic conditions with the lane configurations and traffic control shown in Table 22. Refer to Table 22 for a summary of the analysis results. Refer to Appendix V for the Synchro capacity analysis reports.

Capacity analysis of 2032 build and 2037 build traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 22: Analysis Summary of IPP Extension and Site Access 8

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2032 Build Conditions	**WBLR**	-	5	57	A	9.1	A (9.1)	N/A	10	58	A	9.1	A (9.1)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	5	36	A	7.5	A (7.5)		5	31	A	7.5	A (7.5)	
2032 Build Conditions *(Greylock)*	**WBLR**	-	5	60	A	9.1	A (9.1)	N/A	10	63	A	9.6	A (9.6)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	3	42	A	7.5	A (7.5)		5	31	A	7.5	A (7.5)	
2037 Build Conditions	**WBLR**	-	5	64	A	9.1	A (9.1)	N/A	10	68	A	9.1	A (9.1)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	5	40	A	7.5	A (7.5)		5	40	A	7.5	A (7.5)	

2037 Build Conditions *(Greylock)*	**WBLR**	-	5	68	A	9.1	A (9.1)	N/A	10	68	A	9.6	A (9.6)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	3	31	A	7.5	A (7.5)		5	31	A	7.5	A (7.5)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.18. IPP Extension and Site Access 9

The proposed unsignalized intersection of IPP Extension and Site Access 9 was analyzed under 2026 build, 2032 build, and 2037 future traffic conditions with lane configurations and traffic control shown in Table 23. Refer to Table 23 for a summary of the analysis results. Refer to Appendix W for the Synchro capacity analysis reports.

Capacity analysis of 2026 build, 2032 build, and 2037 build traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 23: Analysis Summary of IPP Extension and Site Access 9

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2026 Build Conditions	**WBLR**	-	3	31	A	8.6	A (8.6)	N/A	0	31	A	8.7	A (8.7)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	0	6	A	7.3	A (7.3)		0	6	A	7.3	A (7.3)	
2026 Build Conditions (Greylock)	**WBLR**	-	3	36	A	8.7	A (8.7)	N/A	0	36	A	8.9	A (8.9)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	0	0	A	7.3	A (7.3)		0	0	A	7.3	A (7.3)	
2032 Build Conditions	**WBLR**	-	64	99	A	8.7	A (8.7)	N/A	3	36	A	8.7	A (8.7)	N/A
	NBT**R**	-	0	85	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	6	11	A	7.3	A (7.3)		3	38	A	7.3	A (7.3)	

2032 Build Conditions (Greylock)	**WBLR**	-	5	41	A	8.8	A (8.8)	N/A	3	45	A	8.8	A (8.8)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	0	18	A	7.3	A (7.3)		3	24	A	7.4	A (7.4)	
2037 Build Conditions	**WBLR**	-	5	50	A	8.7	A (8.7)	N/A	3	35	A	8.7	A (8.7)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	0	12	A	7.3	A (7.3)		3	18	A	7.3	A (7.3)	
2037 Build Conditions (Greylock)	**WBLR**	-	5	53	A	8.8	A (8.8)	N/A	3	35	A	8.8	A (8.8)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	0	12	A	7.3	A (7.3)		3	28	A	7.4	A (7.4)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.19. IPP Extension and Public Road C / Greylock Ridge Road Extension

The proposed unsignalized intersection of IPP Extension and Public Road C / Greylock Ridge Road was analyzed under 2026 build, 2032 build, and 2037 future traffic conditions with lane configurations and traffic control shown in Table 24. Refer to Table 24 for a summary of the analysis results. It should be noted that this intersection is effectively analyzed as Site Access 10 for the future analysis scenarios that do not consider the completion of the Greylock Ridge Road Extension due to the otherwise dead-end nature of Public Road C. Additional analysis of Site Access 10 with completion of the Greylock Ridge Road Extension is provided in Section 8.19. Refer to Appendix X for the Synchro capacity analysis reports.

Capacity analysis of 2026 build, 2032 build, and 2037 build traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 24: Analysis Summary of IPP Extension and Greylock Ridge Road

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2026 Build Conditions	**EBLR**	-	0	31	A	8.7	A (8.7)	N/A	0	35	A	8.7	A (8.7)	N/A
	NB**L**T	-	0	0	A	7.3	A (7.3)		0	0	A	7.3	A (7.3)	
	SBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	

2026 Build Conditions *(Greylock)*	**EBLR**	-	0	32	A	8.8	A (8.8)	N/A	3	45	A	9.0	A (9.0)	N/A
	NB**L**T	-	0	0	A	7.3	A (7.3)		0	0	A	7.3	A (7.3)	
	SBT**R**	-	0	0	-	-	-		0	0	-	-	-	
2032 Build Conditions	**EBLR**	-	3	44	A	8.8	A (8.8)	N/A	0	31	A	8.8	A (8.8)	N/A
	NB**L**T	-	0	0	A	7.3	A (7.3)		0	6	A	7.3	A (7.3)	
	SBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
2032 Build Conditions *(Greylock)*	**EBLR**	-	3	49	A	8.8	A (8.8)	N/A	3	35	A	9.0	A (9.0)	N/A
	NB**L**T	-	0	0	A	7.3	A (7.3)		0	6	A	7.4	A (7.4)	
	SBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
2037 Build Conditions	**EBLR**	-	3	36	A	8.8	A (8.8)	N/A	0	35	A	8.8	A (8.8)	N/A
	NB**L**T	-	0	0	A	7.3	A (7.3)		0	0	A	7.3	A (7.3)	
	SBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
2037 Build Conditions *(Greylock)*	**EBLR**	-	3	30	A	8.8	A (8.8)	N/A	3	44	A	9	A (9.0)	N/A
	NB**L**T	-	0	12	A	7.3	A (7.3)		0	6	A	7.4	A (7.4)	
	SBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.20. Greylock Ridge Road Extension and Site Access 10

The proposed unsignalized intersection of Greylock Ridge Road Extension and Site Access 10 was analyzed under 2026 build, 2032 build, and 2037 future traffic conditions with lane configurations and traffic control shown in Table 25. Refer to Table 25 for a summary of the analysis results. Refer to Appendix Y for the Synchro capacity analysis reports.

Capacity analysis of 2026 build, 2032 build, and 2037 build traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS A during the weekday AM and PM peak hours. Based on the queueing analysis results, excessive queueing is not expected to be an issue at this intersection upon buildout of the proposed development.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 25: Analysis Summary of Greylock Ridge Road Extension and Site Access 10

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2026 Build Conditions *(Greylock)*	EB**L**T	-	0	0	A	7.3	A (7.3)	N/A	0	12	A	7.3	A (7.3)	N/A
	WBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	0	30	A	8.5	A (8.5)		0	31	A	8.7	A (8.7)	
2032 Build Conditions *(Greylock)*	EB**L**T	-	0	0	A	7.2	A (7.2)	N/A	0	6	A	7.3	A (7.3)	N/A
	WBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	3	31	A	8.5	A (8.5)		0	36	A	8.7	A (8.7)	
2037 Build Conditions *(Greylock)*	EB**L**T	-	0	0	A	7.2	A (7.2)	N/A	0	6	A	7.3	A (7.3)	N/A
	WBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SBLR	-	3	36	A	8.5	A (8.5)		0	41	A	8.7	A (8.7)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.21. Sports Parkway and Public Road A / Site Access 11

The proposed unsignalized intersection of Sports Parkway and Public Road A / Site Access 11 was analyzed under 2032 build and 2037 future traffic conditions with lane configurations and traffic control shown in Table 26. Refer to Table 26 for a summary of the analysis results. Refer to Appendix Z for the Synchro capacity analysis reports.

Capacity analysis of 2032 build and 2037 build traffic conditions indicates the major-street left turn movements and minor-street approaches are expected to operate at LOS C or better during the weekday AM and PM peak hours.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 26: Analysis Summary of Sports Parkway and Public Road A / Site Access 11

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2032 Build Conditions	EBL**T**R	-	8	93	A	9.9	A (9.9)	N/A	30	108	C	18.9	C (18.9)	N/A
	WBLTR	-	3	35	A	9.2	A (9.2)		8	87	B	12.0	B (12.0)	
	NBLT**R**	-	0	29	A	7.4	A (7.4)		3	104	A	8.1	A (8.1)	
	SB**L**TR	-	0	18	A	7.3	A (7.3)		3	37	A	7.7	A (7.7)	
2037 Build Conditions	EBL**T**R	-	8	55	A	9.9	A (9.9)	N/A	33	85	C	20.1	C (20.1)	N/A
	WBLTR	-	3	35	A	9.3	A (9.3)		10	61	B	12.3	B (12.3)	
	NBLT**R**	-	0	31	A	7.4	A (7.4)		3	50	A	8.2	A (8.2)	
	SB**L**TR	-	0	18	A	7.3	A (7.3)		3	62	A	7.8	A (7.8)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

8.22. Sports Parkway and Site Access 12

The proposed unsignalized intersection of Sports parkway and Site Access 12 was analyzed under 2032 build, 2037 build, and 2045 future traffic conditions with lane configurations and traffic control shown in Table 27. Refer to Table 27 for a summary of the analysis results. Refer to Appendix AA for the Synchro capacity analysis reports.

Capacity analysis of 2032 build and 2037 build traffic conditions indicates the major-street left turn movements and minor-street approaches are expected to operate at LOS B or better during the weekday AM and PM peak hours.

Right and left-turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*; however, based on the low expected turning movement volumes into the site, exclusive turn lanes are not warranted at this intersection. Refer to Appendix DD for a copy of the turn lane warrants.

Table 27: Analysis Summary of Sports Parkway and Site Access 12

ANALYSIS SCENARIO	LANE GROUP	Existing Storage (ft)	Weekday AM Peak Hour						Weekday PM Peak Hour					
			Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue (ft)		Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
			95th	Max					95th	Max				
2032 Build Conditions	**WBLR**	-	3	40	A	8.6	A (8.6)	N/A	3	35	B	10.3	B (10.3)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	0	0	A	7.3	A (7.3)		3	45	A	7.7	A (7.7)	
2037 Build Conditions	**WBLR**	-	3	36	A	8.7	A (8.7)	N/A	3	44	B	10.5	B (10.5)	N/A
	NBT**R**	-	0	0	-	-	N/A		0	0	-	-	N/A	
	SB**L**T	-	0	6	A	7.3	A (7.3)		3	36	A	7.7	A (7.7)	

Bold indicates improvement and/or lane reconfiguration to be done by the developer.

9. CRASH DATA ANALYSIS

Crash data was requested from the NCDOT for a five-year period of June 1, 2017, through May 31, 2021, at the intersections listed below to determine existing safety issues along this stretch of roadway. A summary of the crash results is provided for the intersections in Table 28 and Table 29. Refer to Appendix CC for the crash analysis reports.

Table 28: Crash Analysis Summary for Intersections

Intersection Analyzed	Number of Crashes						Total Crashes
	2017[1]	2018	2019	2020	2021	2022[2]	
US 74 and Matthews-Mint Hill Road and	21	42	47	44	33	8	195
US 74 and Sports Parkway	0	1	1	1	0	0	3
Matthews-Mint Hill Road and Crestdale Road	0	1	3	0	1	0	5
Matthews-Mint Hill Road and Independence Point Parkway	2	0	6	3	6	2	19
Matthews-Mint Hill Road and Brigman Road	0	2	1	3	2	1	9
Matthews-Mint Hill Road and Moore Road / Northeast Parkway	2	1	1	3	4	0	11
Sports Parkway and Brigman Road	0	2	1	0	0	0	3
Sports Parkway and Tank Town Road	0	0	0	1	0	0	1
Total	**25**	**49**	**60**	**55**	**46**	**11**	**246**

[1] – June 1 through December 31 (7 months of data in 2017)
[2] – January 1 through May 31 (5 months of data in 2022)

246 crashes were reported at the study intersections for the five-year period analyzed. The signalized intersection of US 74 and Matthews-Mint Hill Road experiences a much larger quantity of crashes than the other study intersections. Heavy traffic along US 74 is expected to be the primary reason for the high crash rate.

Of the 246 crashes reported at the study intersections for the five-year period analyzed, two were fatal. Both fatal crashes occurred at the intersection of US 74 and Matthews-Mint Hill Road. According to the crash data reports, the first fatal accident occurred in August 2016 and involved a single vehicle traveling at 65 mph (speeding) when it ran off the roadway. The

second fatal accident occurred in January 2021 and involved a pedestrian being stuck by a vehicle traveling 32 mph. Per the NCDOT crash data reports, alcohol/drugs were either not involved or unknown in either crash.

Table 29: Crash Type Summary for Intersections

Strip Analyzed	Number of Crashes						Total Crashes
	Angle	Left-Turn	Right-Turn	Sideswipe	Rear End	Other	
Matthews-Mint hill Road and US 74	30	5	3	34	110	13	195
Sports Parkway and US 74	1	0	0	1	1	0	3
Matthews-Mint Hill Road and Crestdale Road	3	0	0	0	2	0	5
Matthews-Mint Hill Road and Independence Point Parkway	5	4	2	0	8	0	19
Matthews-Mint Hill Road and Brigman Road	1	3	0	0	3	2	9
Matthews-Mint Hill Road and Moore Road / Northeast Parkway	2	3	0	3	3	0	11
Sports Parkway and Brigman Road	2	0	0	0	0	1	3
Sports Parkway and Tank Town Road	0	0	0	0	0	1	1
Total Crashes	44	15	5	38	127	17	246
Percent of Total Crashes	**18%**	**6%**	**2%**	**15%**	**52%**	**7%**	**--**

Table 26 above, outlines the type of crashes experienced at the listed intersections. Approximately 52% of the crashes are the result of rear-end collisions. This is typical for high-speed roadways with signalized intersections, such as US 74.

Based on the review of this cash data, no additional off-site roadway improvements by the proposed development are recommended. It should be noted that the planned future U-2509 roadway improvements are expected to grade-separate the roadways of US 74 and Matthews-Mint Hill Road which is expected to significantly decrease the frequency of crashes in the study area.

10. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the proposed Brigman Property mixed-use development, to be located south of Matthews-Mint Hill Road and west of Sports Parkway in Matthews, North Carolina. The proposed development is expected to be a mixed-use development and be fully built out in 2032, with intermediate phases of buildout expected in 2025 and 2026.

Site access to the northeastern section is proposed via one (1) full movement intersection along IPP Extension and two (2) full movement intersections along Public Road A. Site access to the northwestern section of the main site is proposed via one (1) full movement intersection along Independence Point Parkway Extension (IPP Extension) and one (1) full movement intersection along Public Road A. The full movement site drive along IPP Extension is expected to be aligned between the northeastern and northwestern sections of the main site.

Site access to the southwestern section is proposed via three (3) full movement intersections along Public Road A and one full movement intersection along Public Road C / Greylock Ridge Road Extension. The easternmost intersection along Public Road A, west of IPP Extension, is proposed to be aligned with the site driveway for the northwestern section. Site Access to the southeastern section of the site is proposed via two (2) full movement intersections along IPP Extension and one (1) full movement intersection along Public Road A.

Site access to Parcel T is proposed via connection to the future intersection of Sports Parkway and Public Road A as the 4th leg of this future intersection, and via one (1) full movement intersection to the south along Sports Parkway. Refer to Figure 2 for a copy of the preliminary site plan and to Appendix A for more information about the proposed site access locations.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2025 No-Build Traffic Conditions
- 2025 Build (Phase 1) Traffic Conditions
- 2026 No-Build Traffic Conditions
- 2026 Build (Phase 2) Traffic Conditions
- 2026 Build (Phase 2) Traffic Conditions *with Greylock Extension*
- 2032 No-Build Traffic Conditions
- 2032 Build (Full Build) Traffic Conditions
- 2032 Build (Full Build) Traffic Conditions *with Greylock Extension*
- 2037 No-Build Traffic Conditions
- 2037 Build (Build Year +5) Traffic Conditions
- 2037 Build (Build Year +5) Traffic Conditions *with Greylock Extension*
- 2045 No-Build Traffic Conditions
- 2045 Future (U-2509 Design Year) Traffic Conditions
- 2045 Future (U-2509 Design Year) Traffic Conditions *with Greylock Extension*

Trip Generation

It is estimated that the proposed development will generate approximately 3,689 total site trips on the roadway network during a typical 24-hour weekday period under Phase 1 (2025) build out. Of the daily traffic volume, it is anticipated that 214 external trips (78 entering and 136 exiting) will occur during the weekday AM peak hour and 295 external trips (166 entering and 129 exiting) will occur during the weekday PM peak hour.

It is estimated that the proposed development will generate approximately 4,950 total site trips on the roadway network during a typical 24-hour weekday period under Phase 2 (2026) build out. Of the daily traffic volume, it is anticipated that 292 external trips (97 entering and 195 exiting) will occur during the weekday AM peak hour and 409 external trips (237 entering and 172 exiting) will occur during the weekday PM peak hour.

It is estimated that the proposed development will generate approximately 681 primary trips (309 entering and 372 exiting) during the weekday AM peak hour and 914 primary trips (462 entering and 452 exiting) during the weekday PM peak hour.

Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to NCDOT Congestion Management Guidelines. Refer to section 6.1 of this report for a detailed description of any adjustments to these guidelines made throughout the analysis.

11. RECOMMENDATIONS

Based on the findings of this study, specific geometric improvements have been identified and are recommended to accommodate future traffic conditions. See a more detailed description of the recommended improvements below. Refer to Figure 33 for an illustration of the recommended lane configuration for the proposed development under phase 1 of development (2025), phase 2 of development (2026), full buildout of development (2032), and full buildout + 5 years (2037) of development.

2025 Build Recommended Improvements by Developer

Matthews-Mint Hill Road and Independence Pointe Parkway (IPP) / Driveway

- Construct a northbound IPP right turn lane with 250 feet of storage and appropriate taper length.
- Extend the westbound Matthews-Mint Hill Road left turn lane to provide 300 feet of storage and appropriate taper length.

Matthews-Mint Hill Road and Brigman Road

- Monitor the intersection for signalization and install signal once warrants are met.
- Extend the northbound Brigman Road right turn lane to provide 300 feet of storage and appropriate taper length.

Independence Point Parkway (IPP) Extension and Public Road A

- Construct the eastbound and westbound approaches of Public Road A with one ingress and one egress lane (shared left-through-right lane).
- Construct the northbound and southbound approaches of IPP Extension with one ingress and one egress lane (shared left-through-right lane).

Public Road A and Site Access 2

- Construct Site Access 2 with one ingress and one egress lane (shared left-right lane).

Public Road A and Site Access 3

- Construct Site Access 3 with one ingress and one egress lane (shared left-right lane).

Public Road A and Site Access 4

- Construct Site Access 4 with one ingress and one egress lane (shared left-right lane).

2026 Build Recommended Improvements by Developer

Matthews-Mint Hill Road and Brigman Road

- Construct a westbound Matthews-Mint Hill Road left turn lane with 300 feet of storage and appropriate taper length.

Public Road A and Site Access 5

- Construct Site Access 5 with one ingress and one egress lane (shared left-right lane).

Public Road A and Site Access 6

- Construct Site Access 6 with one ingress and one egress lane (shared left-right lane).

Public Road A and Site Access 7

- Construct Site Access 7 with one ingress and one egress lane (shared left-right lane).

IPP Extension and Site Access 9

- Construct Site Access 9 with one ingress and one egress lane (shared left-right lane).

IPP Extension and Site Access 10

- Construct Site Access 10 with one ingress and one egress lane (shared left-right lane).

2032 Build Recommended Improvements by Developer

Matthews-Mint Hill Road and Independence Pointe Parkway (IPP) / Driveway

- Extend the eastbound Matthews-Mint Hill Road left turn lane to provide 325 feet of storage and appropriate taper length.
- Construct an eastbound Matthews-Mint Hill Road through-right lane that provides 400 feet of storage and appropriate taper length.

Matthews-Mint Hill Road and Brigman Road

- Construct an eastbound Matthews-Mint Hill Road through-right lane that extends back to the intersection of Matthews-Mint Hill Road and IPP.

IPP Extension and Site Access 8

- Construct Site Access 8 with one ingress and one egress lane (shared left-right lane).

Sports Parkway and Public Road A / Site Access 11

- Construct Site Access 11 with one ingress and one egress lane (shared left-through-right lane).

Sports Parkway and Site Access 12

- Construct Site Access 12 with one ingress and one egress lane (shared left-right lane).

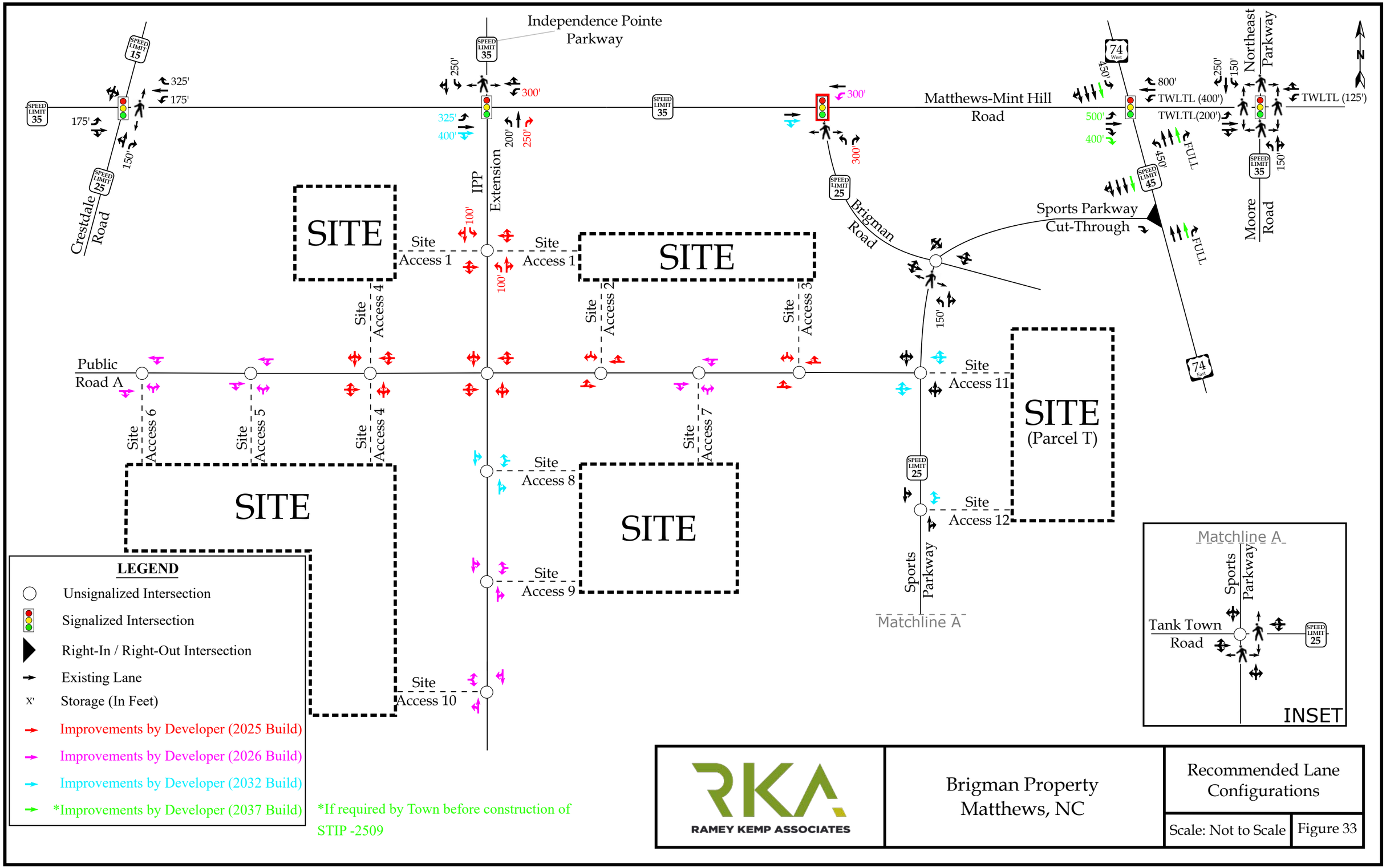
2037 Build Recommended Improvements by Developer (If required by Town)

US 74 and Matthews-Mint Hill Road

- Extend the eastbound Matthews-Mint Hill Road left turn lane to provide 500 feet of storage and appropriate taper length.
- Construct an additional eastbound Matthews-Mint Hill Road right turn lane with 400 feet of storage and appropriate taper length.
- Construct and additional southbound US 74 through lane.
- Construct an additional northbound US 74 through lane.

US 74 and Sports Parkway

- Construct and additional southbound US 74 through lane.
- Construct an additional northbound US 74 through lane.


Independence Pointe Parkway
Matthews-Mint Hill Road
Crestdale Road
IPP Extension
Brigman Road
Sports Parkway Cut-Through
Northeast Parkway
Moore Road
Public Road A
Sports Parkway
Tank Town Road
SITE
SITE
SITE
SITE
SITE
Site Access 1
Site Access 1
Site Access 2
Site Access 3
Site Access 4
Site Access 4
Site Access 5
Site Access 6
Site Access 7
Site Access 8
Site Access 9
Site Access 10
Site Access 11
Site Access 12
Matchline A
Matchline A
INSET
LEGEND
Unsignalized Intersection
Signalized Intersection
Right-In / Right-Out Intersection
Existing Lane
X' Storage (In Feet)
Improvements by Developer (2025 Build)
Improvements by Developer (2026 Build)
Improvements by Developer (2032 Build)
*Improvements by Developer (2037 Build)
*If required by Town before construction of STIP -2509
RAMEY KEMP ASSOCIATES
Brigman Property
Matthews, NC
Recommended Lane Configurations
Scale: Not to Scale
Figure 33